Alabama's TREASURED Forests

SPRING 1998

Snakes: Fact and Fiction

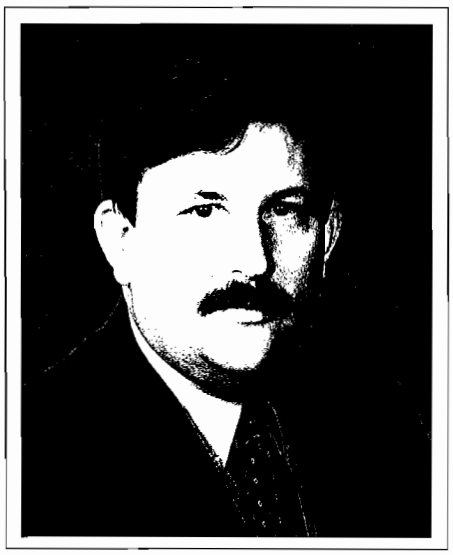
Horse and Mule Logging

Stumpage Price Trends

Forest Fertilization

STATE FORESTER'S MESSAGE

by TIMOTHY C. BOYCE, State Forester



I recently attended the TREASURE Forest Association's Board of Directors meeting where they toured the first certified TREASURE Forest. Some might call this property, owned by Kelly Mosley, the "Birthplace of TREASURE Forest." The spirits of the board members and the executive director, James Malone, were upbeat and reflect a very ambitious agenda, which is shown in their goals for 1998.

These goals include the following:

1. Create a brochure describing the membership categories of the association.
2. Provide leadership training for regional support teams.
3. Create a brochure on the Adopt-a-School program.
4. Promote and conduct technical training sessions for landowners.
5. Continue establishing county chapters and add 500 members in 1998.
6. Expand the silent auction held at the annual Landowner and TREASURE Forest Conference.

The TREASURE Forest Association has also been active in helping bring the 1998 Southern Outreach Conference to Alabama this fall. The objective of the conference is to increase participation of underserved small acreage landowners in USDA and other landowner programs. It is a follow-up to the Summit of the South meeting held last year in Richmond, Va. The conference will have four major components: outreach, information and education, program know-how and program delivery. For more information on this upcoming meeting call Regina Miller at 334-240-9392.

For those of you who are not familiar with the TREASURE Forest Association, let me quote Executive Director James Malone. "The essence of the association is to encourage a commitment to make Alabama forests a better place for present and future generations, to offer assistance to others in their endeavor to own a TREASURE Forest, and to provide a forum through which landowners are given a chance to speak with one voice on issues directly affecting the state's forest resources." If you would like more information about the association call James at 334-679-6087, or write to the TREASURE Forest Association, P.O. Box 145, Chunchula, AL 36521.

Sincerely,

Timothy C. Boyce
State Forester

Alabama's TREASURED Forests

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DEPARTMENTS

COVER: This recently thinned 15-year-old pine stand is found on Barnett and Edna King's TREASURE Forest in Crenshaw County. Thinning allows the remaining trees to grow faster and produce higher quality wood. Read more about the Kings' property and their environmental education efforts on pages 4-6. Photo by Kim Gilliland.

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Fern Valley

by KIM GILLILAND, Editor

Thousands of school children across the state take field trips each year. Their classes visit the state Capitol in Montgomery, the Space Center in Huntsville, local zoos and art museums. Children in Crenshaw County are visiting a local TREASURE. Barnett and Edna King have opened their TREASURE Forest to any class that wants to visit. A nature trail on the couple's property has been developed into the perfect place for a class field trip. Last year 766 students, teachers and parents visited the trail.

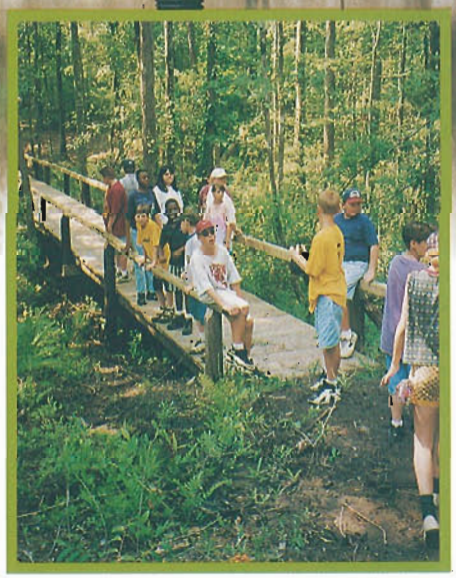
Fern Valley

The Kings are quick to point out that they have had assistance developing the trail, which is named Fern Valley because of the four different varieties of wild ferns growing there. Many individuals and groups have contributed to the development and maintenance of the trail. These represent state and federal agencies and organizations as well as friends and relatives.

The Kings first got the idea for a nature trail when the TREASURE Forest Association began promoting the Adopt-a-School concept. They felt like their property had something to offer, and approached the county superintendent of education with the idea. It didn't take long to convince the school system that local children could benefit from learning about nature at a hands-on facility. The Kings now have a written agreement with the school system that outlines how the tours are conducted.

The nature trail was developed on an 87-acre tract that had an old logging road, which was an excellent start in constructing the trail. That road became the center of the trail and the Kings established an entrance and an exit, making the trail just over a mile long. Safety comes into consideration first, as dying and leaning trees are removed from along the trail as necessary. With the exception of a small incline near the end of the trail, it is fully accessible by wheelchairs.

Parking is allowed at the beginning of the trail for buses. Handicapped accessible restrooms are also located near the start of the trail. The building housing the restrooms was built almost entirely from the lumber cut from one yellow poplar tree that had been blown over by a storm. Signs along the trail mark points of interest, identify trees and direct walkers with arrows. Benches are provided at intervals, as are trash cans. An outdoor classroom contains a lectern and eight benches. Picnic tables near the pond provide a shady area to eat lunch or snacks. A typical fifth grade program might include stops on tree identification, TREASURE Forest, insects, nature and music, and an art project. Usually local Earth Team volunteers help with the tours so there is enough adult supervision for each group of students.



A local school group tours the nature trail.

Through their local Soil and Water Conservation District, the Kings applied and were approved for a Legacy grant to improve the nature trail in 1998. This money will be used to add a second outdoor classroom with seating area, additional picnic tables near the restrooms, tree and shrub identification markers, water quality test kits, and two outdoor weatherproof poster boards.

"We have some trees identified, and we're in the process of doing more," Barnett said. Since children learn by repetition, he feels they need to see the same species identified several times along the trail. Near the end of the trail he wants to cover up some of the signs and let the children guess the tree species. Three wooden foot bridges allow walkers to cross streams and wet areas. The longest

bridge is 97 feet long; another spans 35 feet. The most picturesque is a 15-foot covered bridge with wooden shingles. Inside the covered bridge is a framed marker that tells where the stream below originates and the path it takes to reach the Gulf of Mexico. This puts the small stream in perspective for the children—how even the smallest parts of our forest are connected to the vastness of nature.

The Kings have used the trail to show how prescribed burning can benefit the forest. Along a section of trail one side has been burned and the other remains unburned to demonstrate the advantages of using fire as a management technique. The consequences of erosion are evident near a section of trail called "Little Grand Canyon." Barnett points out that many years ago farming techniques on the hillside allowed water to wash the soil away. Another interesting feature is the "lizard fence." Barnett constructed a short fence surrounded by rocks where lizards can sun themselves. According to the Kings, this idea, which came from wildlife biologist Bob Waters, has been a big hit with children. In addition to bird-watching, the students also enjoy finding deer and other animal tracks along the trail.

A wildflower garden and a butterfly garden are found near the entrance to the trail. These were planted by local fourth and fifth grade 4-H students. Barnett and Edna maintain the gardens throughout the growing season and say that's part of the enjoyment of their TREASURE Forest. "We just like to walk in the woods and work in the woods," said Edna.

The outdoor classroom allows students to learn in a natural surrounding. Trees along the trail are identified with both common and scientific names.

Adults Benefit Also

Children are not the only ones who benefit from Fern Valley. Adult groups are also welcome for tours or to conduct meetings at the Kings' cabin, which is located along the trail between two ponds. An adult tour of the nature trail might include stops on erosion, plant succession, wildlife management, and aesthetics.

The cabin was constructed by Barnett and friend Werner Tiedtke. Much of the interior is made of wood cut from the property. Yellow poplar, maple, red oak, and ash are just a few of the species used for the paneling. A large kitchen, living room, bedroom and bath contain most of the comforts of home, including a large fireplace. Family and friends occasionally spend the night there.

Inside this covered bridge is a framed marker that tells where the stream below originates and the path it takes to reach the Gulf of Mexico.

Timber Productivity

Barnett describes the type of land he purchased over the years as "throw away

(Continued on page 15)

The lizard fence is popular with children.

Editor's Understory

by KIM GILLILAND, Editor

To be certified as a TREASURE Forest, a landowner must manage all of his or her land under the guidelines of the program. For Barnett and Edna King that means seven separate tracts of land totaling 543 acres. The tract sizes range from 37 to 124 acres, all in Crenshaw County.

Barnett King began purchasing land in the late 1950s. "I'd just buy a little when I'd get a few dollars," he said. "I didn't inherit any of my land." During his time in the National Guard, every check was saved for a future land purchase. The land those savings purchased was the beginning of his TREASURE Forest.

An ongoing project is what Barnett calls "grooming" his forest. He cuts inferior trees for firewood and makes sure others are left for aesthetic reasons. He admits that over the years he made mistakes, like planting some species on incorrect sites, but the knowledge gained has made the whole process worthwhile. As a landowner who has been planting trees for many years, Barnett thinks that the genetically improved pine seedlings available in today's market have definitely made a difference in the quality of timber he's currently growing.

Although he doesn't hunt, Barnett still manages carefully for wildlife. Plantings of sawtooth oak, Chinese chestnut, crab apple, clover, wheat, rye, oats and corn are common throughout the property. He makes his own bluebird boxes and many are visible on the edges of wooded areas. Deer stands are used by family and friends who like to hunt, and these double as wildlife observation towers. The Kings were able to observe some wildlife up close one morning when they discovered a barred owl had nested in one of the enclosed blinds. In addition to the adult owl, three baby owls had hatched and were scurrying around inside.

Edna and Barnett King

As a county executive director for the Agricultural Stabilization and Conservation Service, Barnett acquired a lot of hands-on knowledge about conservation, farming and forestry. "That was where I got my education," he said. He retired from the ASCS in 1983 after 31 years of service. Through the years he learned even more about forestry from other state and federal agencies, as well as forest industry. "I have relied on information that was free. There's a lot of information available if someone wants it. There are so many people that have encouraged me."

Since he first became involved in TREASURE Forest in 1982, Barnett has taken a leadership role in the program. He first served on the Advisory Committee, which made recommendations to the state forester about the program. That small committee was the foundation for what developed into the TREASURE Forest Association. He has served two consecutive three-year terms as a regional representative on the board of directors of the association. He has also served on the committee that reviews and certifies properties nominated for TREASURE Forest. He and Edna are good spokespersons for the TREASURE Forest Program and the Association. "I really love it," says Barnett. "It's one of the best organizations I've been affiliated with." Currently Barnett is serving his second year as president of the Alabama Association of Conservation Districts and is also active in the Wiregrass District of the Resource Conservation and Development Council.

Edna, who is a retired textile plant supervisor, serves as a county leader for Crenshaw County. She is actively trying to locate other landowners who may be interested in becoming a part of the TREASURE Forest Program. Both she and Barnett are also members of the Crenshaw County Forestry Planning Committee. The Kings reside in Luverne and attend Luverne United Methodist Church.

Like many other people who are retired, the Kings joke that they are busier now than when they had full-time jobs, but gladly share their time and talents. They are truly good ambassadors for the TREASURE Forest Program and forestry in Alabama.

Log a Load for Kids

Forestry Community Helps Children's Hospitals

The forestry community is coming together once again to help children in need. "Reaching our $400,000 Log a Load for Kids goal this year will mark Alabama as the first state to exceed the $2 million mark in this national campaign to aid children's hospitals," says Jimmy Hudspeth. The Henry County logger is state chairman of the campaign now underway in 25 states. Money raised in Alabama and in other states go to those special medical centers within each state that treat critically ill, injured and abused children.

"We should all be extremely proud of Alabama's national fund-raising leadership since first becoming involved in Log a Load for Kids in 1992, including the $392,558 raised in 1997," Hudspeth said. "To date the Alabama forestry community has collected over $1.65 million in support of Children's Miracle Network efforts to raise funds for children's hospitals."

Justin Harris, 10, is the 1998 Log a Load poster kid. In 1996 Justin was rushed to Children's Hospital in Birmingham for treatment of complications following an operation for a ruptured appendix. He is the son of Brian and Ginger Harris of Gallion, Ala. Brian, a forester, is procurement superintendent for the Demopolis area of Alabama River Woodlands. Ginger is employed by a Demopolis insurance agency.

Of last year's total, $303,798 went to Children's Hospital. There, $53,000 went to satisfy Alabama forestry's 3-year $750,000 commitment to the startup of the Children's Hospital Intervention and Prevention Services (CHIPS), the hospital's child abuse treatment center. An additional $150,000 was committed to supporting CHIPS' day-to-day operations, which includes a statewide public education program to combat the problem of child abuse. Children's is using the remaining $100,785 to help provide medical services and equipment to meet pediatric health-care needs.

Distributions to the University of South Alabama Children's & Women's Hospital totaled $88,332, bringing to over $200,000 the amount raised to date for that facility. The Mobile childcare center recently completed an expansion program to relocate all its services at one site. The project quadruples the square footage for C&W's High-Risk Obstetrical, Labor and Delivery, Intensive Care and Newborn Nurseries.

Since its inception in 1992, Alabama's Log a Load for Kids program has disbursed $1,645,000 in support of the Children's Miracle Network hospitals. In 1996 Alabama became the first of 24 Log a Load states to go over $1 million. A record $2 million level is expected to be reached in 1998.

100 Percent Goes to Hospitals

One of the most positive aspects of Log a Load for Kids is that campaign administrative and overhead costs are absorbed by sponsors. "There's no skimming for high-paid executive salaries and support costs." Hudspeth notes. "This means that fully 100 percent of each donation reaches the donor-designated hospitals. Further, money raised by Alabamians remain with local hospitals."

The statewide campaign is sponsored by the Alabama Forestry Association and the Alabama Loggers Council. "The concept of Log a Load for Kids," explains Hunky Daniel of Union Springs, Alabama Loggers Council chairman, "is for loggers and others in the forestry community to donate the value, to a logger, of a load of logs, about $300. Donors may designate either Children's Hospital or the University of South Alabama Children's & Women's Hospital as recipients." AFA President Jim Martin of Butler appeals to Alabama's 214,000 forest landowners and the more than 170,000 Alabamians in the state who work in forestry or forestry-related jobs to get behind this effort he described as "... contributing so magnificently to the health and well-being of our future generations."

Log a Load for Kids is underway now through May 31. Donations will be announced during the Children's Miracle Network Broadcast May 31 and June 1 from Walt Disney World, near Orlando, Fla., and in Alabama from Huntsville, Birmingham, Montgomery, Dothan and Mobile. The celebrity-hosted network television special is produced by The Osmond Foundation. Specials at the state level are hosted by local television and other area personalities.

"The idea of Log a Load is to bring loggers together with landowners, foresters, wood products manufacturers and others in the forest products industry together to benefit our kids," Hudspeth said. "And you can make miracles happen by sending in your contribution right away." Mail checks, payable to Log a Load for Kids, to Log a Load for Kids, Alabama Forestry Foundation, 555 Alabama St., Montgomery, AL 36104. For information or a donation card, call 334-265-8733. Each donor will receive free a Log a Load for Kids bumper sticker.

Eastern Redbud

by COLEEN VANSANT, Information Specialist, Alabama Forestry Commission, N. E. Region

Although the Eastern redbud (*Cercis canadensis* L.) is not valued commercially, this species (sometimes called the Judas tree) is one of the showiest spring flowering trees in our forests. It is also a highly valued and popular ornamental.

The redbud is usually a shrub or small tree, occasionally becoming 40 feet in height, with a trunk up to 1 foot in diameter, branching 10 to 15 feet above the ground to form a narrow, erect or spreading, flattened or rounded head.

The leaves are alternate, deciduous, simple, kidney-shaped or heart-shaped, and three to five inches in diameter. They are palmately veined, with an abruptly sharp point. Leaves are bright green above, paler and somewhat hairy below. The petiole, or stem, is slender, 2 to 5 inches long and swollen at the base. The leaves provide a handsome yellow color in the fall.

The bark of the redbud is thin, brown, smooth, becoming darker and furrowed with age and tree growth, then forming long, narrow plates that are broken into thin scales. Twigs are slender and brown with a definite zigzag or broken shape.

The redbud's lavender flowers are perfect (having male and female parts), irregular blossoms that appear in early spring before the leaves. They are in clusters of four to eight one-half inch long stalks, and are often found on the trunk of the tree as well as the branches. White and pure pink varieties can be obtained for ornamental purposes.

The very distinguishing fruit is a flat, narrow, oblong pod, 2 to 3 1/2 inches long and pointed at the end. The pod contains several flat seeds that fall during late autumn and winter. The redbud likes moist soils of valleys and slopes and is often found in the open or in mixed hardwood stands. It grows everywhere in Alabama except the extreme coastal plain.

Legend has it that this tree was the one on which the Apostle Judas Iscariot hanged himself after betraying Jesus, and the tiny red buds are drops of blood shed by Jesus. However, since this tree does not grow in the Holy Land, it probably resembled a European tree and the early settlers bestowed upon it the same common name.

FOREST FERTILIZATION

Basic Guidelines for Determining Potentially Suitable Sites/Stands

by CONNER FRISTOE, Technical Forester, Kimberly-Clark Corporation and
TIM L. GOTHARD, Forest Management Chief, Alabama Forestry Commission

Forest fertilization is becoming a topic of increasing interest to private non-industrial forest landowners. Although it is not a new practice to forestry, the frequency with which operational fertilization is being used has risen dramatically in the last decade and continues to climb. Forest fertilization has been used fairly extensively for decades in the management of slash pine on phosphorus deficient sites in the lower coastal plain. As early as the mid 1940s studies documented beneficial effects of fertilization with slash pine and as early as the mid 1950s for loblolly pine on appropriate sites. Of great interest to non-industrial forest landowners is the increased frequency in the use of fertilization with loblolly pine as well as the timing of its use in the life of the stand. In the early 1980s, the number of acres fertilized by industrial forest companies in the southeastern United States averaged between 50,000 and 100,000 acres per year. By the late 1980s the number of acres fertilized began to rise dramatically and has increased into the 1990s. In 1996, it was estimated that industrial forest companies fertilized around 600,000 acres in the Southeast. This activity included fertilization at three different points in the life of a forest stand: at time of establishment, after establishment but early in the life of a stand (ages 2-8), and mid rotation (ages 9-20+). The most dramatic increase in acres treated occurred with mid-rotation fertilization, often following thinning. From the non-industrial private landowner perspective, if industry is this high on the idea, there must be something worth looking into. Indeed it deserves a closer look.

Why Fertilize?

The value of fertilization is fairly common knowledge. Most of us have witnessed its beneficial results due to our involvement with agricultural plantings, gardens, lawns, etc. Plants with access to adequate nutrients are healthier and therefore perform plant functions more efficiently than similar individuals that lack proper nutrition. However, we have traditionally considered forest trees to be well adept at acquiring needed nutrients without significant help, and in general, they are. But what we have become more learned about in recent years is the ability of forest trees to access and utilize nutrients above the level that is often present in their normal environment. Further, some sites we previously considered nutrient plentiful are actually not from the standpoint of the nutrient quantities that forest trees on such sites can beneficially use. Enter forest fertilization and the direct increase of nutrients available

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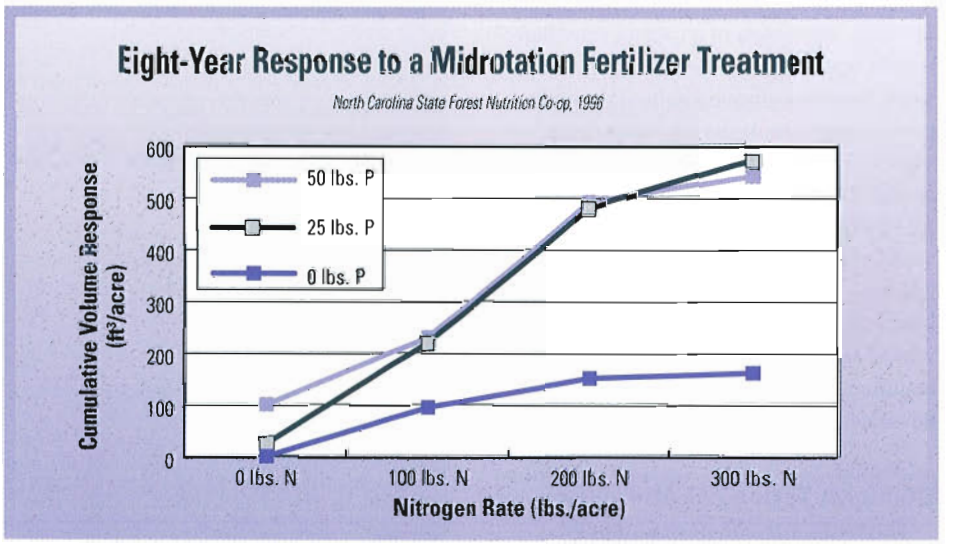
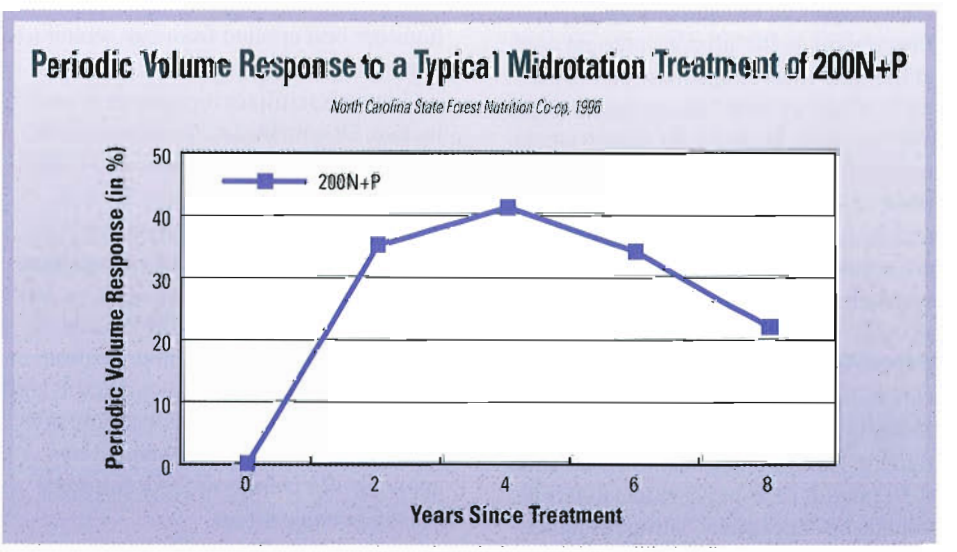




for tree use. It has proven effective in many instances where nutrients were previously not considered a limiting factor.

Direct Responses to Fertilization

Fertilization of forest trees produces results by increasing leaf area. Leaves are the factory producing tree growth. Healthy trees with maximum leaf area produce increased diameter and associated basal area growth and increased height growth, which yields a corresponding increase in volume production. Two primary benefits can be gained from this response to forest fertilization. First, in some instances fertilization may mean the difference between having a merchantable or non-merchantable stand. This has been the primary reason behind fertilization on many phosphorous-deficient sites in the lower coastal plain. Without fertilization, trees on such sites will often never reach merchantable size. A second reason is to increase stand size, volume, and value at a greater rate than would occur without fertilization. This value increase may be gained through pure volume growth (e.g., more pulpwood with no change in product class) and/or through the increase in tree size and therefore product class (e.g., pulpwood growing to chip-n-saw; chip-n-saw growing to sawtimber)—in some instances where product class increases would not occur otherwise; in other instances producing these changes at an advanced rate.

Common Types of Fertilization

The two nutrients most commonly used in forest fertilization applications are Phosphorus (P) and Nitrogen (N). Phosphorus is the primary nutrient used at the time of establishment and in the early stages of stand development. Rates applied range from 30-50 pounds of elemental P per acre at time of establishment or early in the life of the stand (catch-up treatments). These applications are applied from late winter through early summer. Nitrogen fertilization is occasionally used at establishment, but is more concentrated in mid-rotation applications, often following thinning, and frequently incorporates P as well. Mid-rotation fertilizer applications vary from 0-50 pounds of P per acre and 100-300 pounds of N per acre. Nitrogen applications are best applied from late winter to mid spring.

Common fertilizer formulations used include Diammonium Phosphate (DAP: 18-46-0), Triple Super Phosphate (TSP: 0-46-0), Ammonium Nitrate (34-0-0), and Urea (46-0-0). A common application for establishment and catch-up treatments is 200-250 pounds of DAP or TSP per acre, which yields 40-50 pounds of elemental P per acre. For mid-rotation treatments, 25 pounds of elemental P and 200 pounds of elemental N per acre are often desired and can be obtained by applying 125 pounds of DAP followed by 386 pounds of urea.

Table 1. **Site/Stand Characteristics for Evaluating the Relative Probability of Loblolly Pine Response to Phosphorus and Nitrogen Fertilization**

Probability for Response to P	Site/Stand Characteristics
High	Foliar P concentration <0.10%
Moderate	Foliar P concentration 0.10% - 0.12%; may respond in combination with N
Low	Foliar P concentration >0.12% - generally not responsive

Probability for Response to N	Site/Stand Characteristics
High	Soil moisture readily available throughout the year Most clayey, upland Piedmont soils (e.g., Cecil; Davidson) Poorly drained to moderately well drained sandy Coastal Plain soils (e.g., Chipley; Ocilla; Pactolus)
Moderate	Soil moisture often insufficient during portions of the year Moderately well drained to well drained upland loamy soils (e.g., Orangeburg; Norfolk; Ruston) Moderately well drained soils with deep spodic horizons (e.g., Centenary; Echaw)
Low	Insufficient soil moisture or rooting limitations Sandy surface horizon of 40 inches or more (e.g., Troup; Lakeland) Thick spodic horizons near the soil surface (e.g., Murville; Lynn Haven) Shallow to bed rock (e.g., Talladega; Lax) Sufficient nutrients - Site Index 70+ (Base Age 25)

Notes for Nitrogen Categories—after high or moderate probability has been determined for a site, the following should also be noted:

1) Site Index should be 50-70 (Base Age 25).
2) Stand stocking should be from 70-120 square feet of pine basal area per acre.
3) Foliar N concentration should be less than 1.2%. If foliar P concentration is less than 0.12%, P should be added along with N.
4) Allow 6-8 years before harvest.
5) Do not burn later than six months before or earlier than four years after N application to avoid N loss.

Indicators That Fertilization May Yield Results

Perhaps the most important first step in making a decision to fertilize or not fertilize is determining if your stand has a potential to respond. Two important places to sample for clues are in the ground and in the tree. Soil samples can provide clues to the potential ability of your stand to respond to fertilization. For loblolly pine, soil samples which reveal P below 10-12 pounds per acre (5-6 parts per million) indicate a site that is lacking in available P; fertilization may yield a response. Foliar analysis is considered the best approach to evaluate available N

and P levels and the potential of a site/stand to respond to fertilization. Table 1 depicts critical values for loblolly pine based on foliar P and N concentrations, as well as other important points to consider when attempting to determine the potential likelihood for a site/stand to respond to fertilization.

Two additional rules of thumb that can also suggest a potential to respond to fertilization are: 1) the ratio of height to age—if height divided by age is less than three (height at age 10 equals 27 feet; 27/10=2.7), fertilization may yield results; and 2) foliar density—if you see more than 15-20 percent sky when you look up into the canopy of a well-stocked stand, fertilization might produce a response. The rules of thumb and information in Table 1 should be used together as multiple indicators to help determine the potential ability of a stand to respond.

The ratio of foliar P to N can also provide clues on the type fertilization needed. If the ratio of foliar P:N is less than .085, fertilize with P only. If the ratio of foliar P:N is from .085 to less than .105, fertilize with P or P plus N. If the ratio of foliar P:N is greater than or equal to .105, fertilize with N or N plus P.

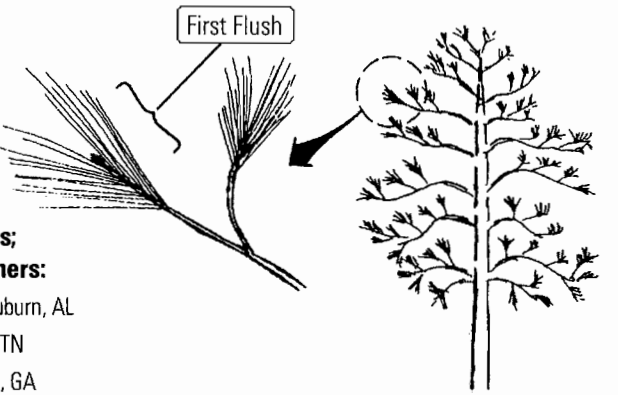
Cost of Application and Response Time

To evaluate the potential profitability of a fertilizer treatment fully, a host of variables must be considered. Foremost is the cost of the application and the time necessary to accumulate the increase in value. Concerning cost of application, standard establishment or catch-up P applications of 200-250 pounds DAP or TSP per acre will range from $30-$40 per acre. Standard N plus P mid rotation applications of 125 pounds DAP and 386 pounds of urea per acre will range from $65-$90 per acre. Prices will vary according to tract size, application method, and fertilizer and fuel costs at given points in time.

Regarding time-frame for response to fertilization and subsequent growth increases, research has indicated that response in mid-rotation treatments is fairly rapid, peaks around four years after treatment, and slowly subsides over the next few years. Most of the growth increase induced by fertilization will occur in the first 8-10 years after treatment.

Table 2. **Four Rules for Taking Foliar Samples**

1) Collect samples in December through February.
2) Collect samples from primary lateral branches in the upper one-half of a dominant or codominant tree (crown should essentially be free of competition for light).
3) Take needles only from the first flush of growth from the previous growing season. The first flush is usually the largest and often lies just behind a small flush of short needles. Needles should be free from disease or insect damage.
4) Carefully label the samples so you're sure what area they came from.



Foliar Analysis is offered by the following testing labs; there may also be others:

1) Auburn University - Auburn, AL
2) A&L Labs - Memphis, TN
3) Waters Labs - Camilla, GA

Note: Proper foliar sampling requires collection of multiple needles from multiple trees on sample plots distributed throughout the stand. Consult with the soil testing lab you intend to use for proper sampling guidelines or arrange for collection of samples by a professional.

Does It Pay to Fertilize?

The answer to this, the most important question, is without a doubt **yes**, **no**, and **don't know for sure**. Sites in the high probability range should yield a positive return on a fertilization investment. Low probability sites may not yield a positive return on investment. Moderately responsive sites may be hit and miss. As with all forest investments, the answer to the question of "profitability" depends on costs, stumpage price changes, and what rate of return your money can yield in other investments. What appears unprofitable one day may be profitable the next and vice versa.

With additional time, trials, and study of stand responses to fertilization, perhaps a "silver bullet" criteria will emerge to allow a fairly accurate and consistent prediction of the magnitude of stand response to fertilization. From that point, additional decision criteria can be developed to help landowners make an educated choice about investing in forest fertilization. In the meantime, consult with a registered forester to evaluate potential profitability based on your specific site/stand conditions, or try the rules of thumb, take some soil and foliar samples and check against the critical values noted here. If it appears you have a stand that may respond, make a test site or two on small areas within your own stands, ones of size and ease of treatment that will perhaps allow you to do some of the work yourself and minimize out of pocket expense. With the aid of a professional forester, in a few years you can evaluate the results and determine if stand scale fertilization is in your best interest.

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A Year in the Life of a Taxpayer

Part 4

by LOU HYMAN,
Deputy Director, Forest Programs Division,
Alabama Forestry Commission

Editor's note: This is the fourth in a five-part series on how federal tax laws affect forest landowners. The first three articles discussed timber sales, reforestation and casualty losses. This article will discuss management expenses. A future article will discuss estate taxes.

The Scenario

Al McCoy owns 120 acres of mixed forestland in northeast Coosa County near the town of Goodwater. He inherited 80 acres from his father in 1980, and purchased an adjoining 40-acre tract in 1987. Daddy's tract had been in the family for years and was forested when he died. The new tract was open field that Al planted to pines in 1988.

Al is a retired lawyer living off his savings of about $500,000 and his and his wife Jenny's Social Security, but no pension. He paid off the mortgage and owns his own house. Two years ago Al sold the timber on the 80 acres he inherited from his father and found how capital gains treatment of timber sales was a benefit to all landowners (Part 1, *ATF*, Summer 1997). He then reforested the tract and learned about reforestation tax credits and amortization (Part 2, *ATF*, Fall 1997). Finally he suffered an attack of Southern Pine Beetles on his land, and he learned about casualty loss rules (Part 3, *ATF*, Winter 1998). After all this, Al took a long vacation and told his consultant to look after the place and fix it up.

Paying the Bill

Al returned rested from his trip and called Steve, his consultant forester, to see what had gone on while he was away. Steve told him he had both good and bad news. A local hunting club had asked to lease Al's land for hunting and was offering $10 per acre for the rights. However, to make it work, Steve had to complete several projects and had run up quite a bill for Al to pay.

They got together the next day and Steve told Al what all had been accomplished. First, the property line around the tract was remarked at a cost of $600. The remaining 20 acres of older pine trees were prescribed burned at a cost of $300. While they had the fire plow there, they went ahead and put a fireline around all the young stands—a cost of $200. Steve also had the gates to the property repaired at a cost of $100. Finally, Steve brought in a grader to redo the roads and graveled some wet spots for a total cost of $500. These were all actual charges, to which Steve needed to add the fee for his time and oversight. The total cost for this year's projects came to $2,200.

Al went and checked the property and saw that Steve did do a good job, so he signed the hunting lease and paid all the bills that Steve presented.

Tax Time

In the new year Al brought all of his paper work, as usual, to his cousin Vinnie, a CPA, to get his tax forms done. Al felt that he could deduct these expenses and get a big tax write-off. He was surprised when Vinnie told him that only part of the cost was deductible. Vinnie asked him what type of landowner Al was. A good one, Al replied.

Vinnie explained that according to the IRS there are three types of landowners: Investors, Passive Owners and Active Managers. The rules that determine which category you belong to are complicated. (See sidebar, p.13). Each different ownership type handled management expenses differently.

An investor landowner lumps his management costs in with all his other miscellaneous deductions and lists them on Schedule A, the Itemized Deductions form. The problem is that miscellaneous deductions have a 2 percent floor; that is, Al can only deduct that part of the expenses which is over 2 percent of his gross

What Management Costs Are Deductible

The IRS has set strict guidelines about what expenses can be deductible by a landowner. They use three general categories: repairs that keep your property in normal efficient operating condition, supplies and materials needed for normal operations, and travel and education directly related to the income potential of the property.

For forestlands, these can include costs for prescribed burning, precommercial thinning, fire protection, insect and disease control, road and firebreak maintenance, salaries for hired labor, consultant forester fees, tools with short useful lives (less than two years of constant use), travel to the farm, travel to educational seminars or conferences, subscriptions to trade and professional publications (such as *Forest Landowner, Alabama Forests*, or *Tree Farmer* magazines). You may also include any normal legal fees and property insurance related to the forest property.

In order to claim management expenses, a taxpayer must show that the expenses are related to a "profitable" investment or business. The IRS demands that a profitable business show a "net profit" for three of the last five years. The term "profit," however, includes appreciation in the value of the assets. As trees grow they increase in value, so that a forest has a "profit" each year, even with little or no cash income.

Property taxes on a tract are automatically deductible regardless of ownership category. Taxes are a separate itemized deduction on Schedule A.

income. In Al's case, he had $30,000 in other income, plus the $1,200 hunting lease payment, so he could only deduct those expenses over $624 ($31,200 times 0.02), or just $1,576. The first $624 is lost, and cannot be deducted or recovered. In Al's tax bracket, the deduction would lower his taxes by $236.40, while the hunting lease would increase his taxes by $180, for a net tax reduction of $56.40.

A passive owner is limited in the amount of expenses that can be deducted as well. As the owner of a "business" Al could lump expenses and incomes. In his case, he had lease income of $1,200 and expenses of $2,200 for a net loss of $1,000. Al would be allowed to "write off" only that loss covered by his income. The other $1,000 can be carried over until next year to be covered by that year's property income or a portion of it could be capitalized (see sidebar below). The net effect in Al's case would be no deduction, but he would not have to pay taxes on the lease income, so there's a net tax savings of $180.

As an active manager, Al would again determine his net profit or loss from the property, but the $1,000 loss would be deductible. By classifying his land as a business, Al could claim a business loss using Schedule C: Profit or (Loss) from Business. If Al's land was part of a farm, he could use Schedule F: Farm Income and Expenses. The net effect of this action would be to lower Al's Gross Income by $1,000 and not have to pay taxes on his lease income, resulting in his taxes being lowered by $330.

Well, that seems pretty straightforward, Al thought. Vinnie, however, pointed out that the IRS has a little-known procedure called the "Governance Over Tax Changes and Avoidances." The GOTCHA rule is that any change from "normal" tax procedures has an impact somewhere else on your tax status. If you claim to be an active manager of a tree farm business, and you sell timber using a lump-sum method, the IRS can yell "GOTCHA" and deny capital gains status to the timber sale, resulting in way more taxes then than what you are saving now. There are two ways out of the GOTCHA trap. One is to sell all timber on a per unit basis, which has other problems (see Part 1 in *ATF*, Summer, 1997). The other is NOT to be in the timber growing and selling business, which might impact your management expense deductions.

Al felt that he would qualify for active manager status, but wanted to protect his capital gains status as well. So he and Vinnie defined his "business" as being a hunting preserve, with lease income and management expenses relating to that business. Any expenses not relating to the wildlife aspects of his property would be capitalized and held against future timber sales as an adjustment to his basis, or cost. Selling timber is not part of a wildlife business, so any such sale would qualify for capital gains.

So Vinnie filled out the forms and Al took the full $330 deduction relating to his management expenses. All these numbers made Al feel faint, so he went home to lie down.

To Be Continued

Capitalizing Versus Deducting

As an alternative to deducting all management expenses each year, a landowner may elect to capitalize some carrying costs. Carrying costs that can be capitalized include certain taxes, interest and "development" costs. Capitalized costs are added to the basis of the timber or the land and are recovered when the trees or the property are sold (see Part 1, *ATF*, Summer 1997 for a discussion of basis).

The IRS defines development costs as investments or repairs that "add to the value of the property or significantly increase its life." Silvicultural projects such as precommercial thinning and timber stand improvement can fit in this category. Investments in bridges and new roads and firebreaks can also be considered development costs.

The use of this provision is not automatic. The taxpayer must choose to capitalize a cost. This is done by attaching a statement to a tax return listing the expenses that are being capitalized. Once a type of expense is capitalized then all future expenses of that type must also be capitalized.

Why capitalize? In the story, Al wanted to protect his use of capital gains for future timber sales, so he classified his land as a hunting preserve business. By doing so he may not be able to deduct any future timber management costs, with no possibility of recovering those costs. By capitalizing them, Al can recover the cost when he later sells the trees. Al could also, if he wishes, capitalize the cost of the road work, adding to the basis of the land, to be recovered when he sold the property.

Passive, Active or Investor

In the story, Vinnie stated that the IRS classified all owners as either investors, passive owners, or active managers.

An INVESTOR is someone who holds land only as an investment, with little management being done and no active participation with the property. Many investors own land for speculation purposes, planning to convert it to other uses in the near future. Investors are limited in how they can treat management expenses, but they also usually have very low expenses.

A PASSIVE OWNER is someone who owns all or part of the property but is not directly involved in managing the land. Many absentee landowners fit in this category, as do family owners of inherited land who are not involved in the management, letting a cousin or a manager handle the details. Passive owners can only deduct expenses up to the amount of income generated by the property.

An ACTIVE MANAGER is someone who owns all or part of a property and "materially participates" in the management of the land. As the person who actually manages the land, an active manager can deduct all expenses related to the management of the property.

The term "materially participates" has a formal definition that can be summarized as being the person who makes the decisions and does the bulk of the work on the property. The IRS rules use the following guidelines for someone to be a material participant:

1. You and your spouse participate in managing the land for over 500 hours during the year, OR
2. You and your spouse do substantially all of the work on the land for that year, OR
3. You and your spouse participate for more than 100 hours per year and no other individual puts in more time, OR
4. If you and your spouse have several "businesses" in which you put in over 100 hours each, and have a total investment for the year of over 500 hours, OR
5. You and your spouse met any these criteria for 5 of the last 10 years, OR
6. If the facts and circumstances of the case show that you and your spouse have participated on a regular, continuous, and substantial basis.

If a landowner uses a consultant to manage his or her land, the landowner must be the decision maker on all aspects of the operation, directing the consultant, as his or her agent, to do the work in the owner's place.

Trees Used to Reduce Air Pollution in Mexico City

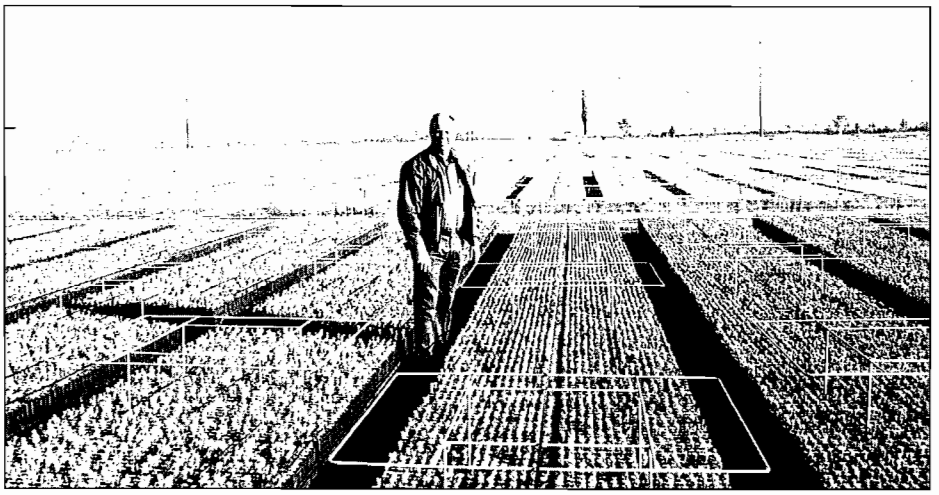
An unprecedented reforestation program is taking place near Mexico City to help authorities combat air pollution in the sprawling metropolitan area. An Alabama-based tree seedling company is gearing up to mass produce millions of young trees in a nursery near the world's second largest city.

International Forest Company (IFC), based in Odenville near Birmingham, is part of an international team working with Mexican government agencies to develop a 500 square mile environmental forest on the southern rim of Mexico City's metropolitan area. The area will function as a pollutant catchment zone where belts of living trees will use their natural ability to absorb carbons and other contaminants from the atmosphere.

Alabama's International Forest Company, the largest independent producer of seedlings for reforestation in the U.S., was selected by Mexican officials to establish a tree nursery operation that will produce more than 150 million seedlings to plant the reforestation zone over seven years beginning in 1998. The project is the largest reforestation program for environmental purposes ever undertaken.

The Mexico City metropolitan area, whose 24 million population rank it second only to Tokyo as the world's largest industrialized urban area, has a severe air pollution problem resulting from its unusual topography and its explosive growth over the past two decades.

The city is surrounded by a wall of mountains that reduces air flow that otherwise would disperse carbons and other pollutants emitted into the atmosphere, primarily by industry, cars, and other fossil fuel users. The atmospheric problem is further compounded by Mexico City's 7,300 foot altitude, where oxygen is one-fourth less than at sea level.



With the mountains that surround Mexico City in the background, R. Wayne Bell, president of Alabama-based International Forest Company, stands in the midst of the containerized tree seedling nursery operated by IFC. Beginning in June, the seedlings will be outplanted to a 500 square mile reforestation zone on the southern rim of Mexico City. The belts of living trees will use their natural ability to absorb carbons and other contaminants from the atmosphere.

Trees the Answer for Carbon Storage

Starting in November 1992, various entities of the Mexican government began developing a plan for using forested areas as a long-range response to the metropolitan area's atmospheric pollution. The comprehensive reforestation program that evolved is supervised by the Natural Resources Commission, an agency of the Mexican Ministry of Ecology. It is one of several initiatives undertaken by Mexican authorities to reduce air pollution in the nation's capital area, including restrictions on car use, vehicle emissions testing, new technologies for industry and motor vehicles, and the improvement and substitution of fuels.

IFC is part of an international consortium led by Japan's Sumitomo Corp. that was formed to assist the Mexican government in the unique environmental reforestation project. The program is estimated to cost $125 million.

The reforestation zone—encompassing 327,000 acres referred to by project planners as a "carbon sink"—is a sparsely populated, government-controlled area regularly blanketed by smog drifting south from the metropolitan area. Three distinct reforestation activities currently are planned for the zone, including 100,000 acres of new forest, 25,000 acres of rehabilitated forest, and 18,500 acres of forest wind breaks to help control and abate dust storms that frequently occur in the Valley of Mexico adding to the atmospheric problems.

Carbons in the form of carbon dioxide are absorbed by trees through the photosynthesis process, releasing oxygen and locking up the carbon in the form of cellulose, sugars, starch, and proteins. Scientific studies done by the U.S. Forest Service indicate that trees—depending on the species, age, size, and other factors—can sequester carbon at an average rate of 1,252 pounds per acre per year.

The estimated 150 million tree seedlings required for the massive reforestation effort far exceeds the production capacity of existing nurseries in the Mexi-

co City area. Mexican officials launched a worldwide search for a contractor with the technological background and nursery production experience to carry out this vital phase of the reforestation program.

In June 1996, after several site visits to IFC's facilities outside Birmingham, the company was awarded a three-year contract to help design, build, and initially operate a state-of-the-art containerized tree nursery at Xochimilco near the reforestation zone. The new facility will be able to produce 30 million seedlings a year, ranking it one of the world's largest containerized seedling nurseries. IFC is also responsible for collecting and processing tree seed drawn from a variety of species of pine and hardwood native to the reforestation area.

The first nursery crop of seedlings was planted in August 1997 and will be harvested in stages between June and August 1998. First year's target production is 9 million seedlings, enough to plant about 12,000 acres. Production will be increased incrementally over the next five years, reaching the 30 million annual production goal by 2000.

Containerized Seedlings Have Better Chance

IFC has produced container tree seedlings on a commercial scale at its facilities in Alabama and Georgia since the mid 1980s. In contrast to conventional "bare root" seedlings, young containerized trees germinate and grow in a special medium under a rigidly controlled nursery environment in individual plastic containers called "cavities." When the seedlings reach the size and maturity for outplanting on their permanent site, they are removed from the cavities with the root system intact and shipped to the planting site where the tree is inserted into a hole the exact size of the seedling's root system. Containerized seedlings grown at IFC nurseries typically have a survival rate of over 90 percent on planted sites throughout the South.

"Our approach to the Mexico City project from the start was that containerized technology was the way to go," said R. Wayne Bell, president of International Forest. "We knew these trees would be planted on difficult sites, tough terrain, and under challenging circumstances where survival would be key to the whole reforestation program. Based on our years of experience, we believe containerized seedlings in Mexico will have a much higher chance of survival, will get off to faster and healthier growth, and will have a longer planting window than bare root seedlings."

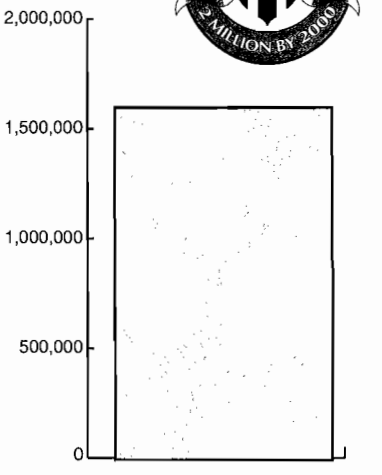
Although IFC is responsible for the overall management of the nursery, it has established a joint venture with Especies Forestates (ESFO), a Mexican corporation, which is responsible for recruiting and supervising the all-Mexican work force of 275 that will be required for the fully operational facility.

As part of its contract, IFC will train the local work force, including management and supervisory staff, engineers, technicians, and other personnel in all facets of the operation. The facility is scheduled to be transferred to Mexican control after the second year's operation.

Established in 1971, International Forest Company produces and markets containerized and bare root seedlings throughout the southeastern U.S. from its nursery facilities at Odenville and at Ashburn, Buena Vista and Statesboro, Georgia. The company also produces and markets tree seed throughout much of the world and provides international forestry project management and reforestation consulting.

UPDATE

The TREASURE Forest Program has set a goal of having 2 million acres in the program by the year 2000. The chart below shows the number of acres currently enrolled in the program.



Fern Valley

Continued from page 5

land." Some was cropland or land where timber had been cut and not replanted. Each tract that he bought was replanted in trees; some of these stands have been harvested and replanted. His pride and joy is a 15-year-old stand of loblolly that was recently thinned. He says that if landowners realize that they can profit from planting trees, many more would take advantage of the opportunity.

Besides thinning the loblolly pine stand in 1997, the Kings planted 1,000 longleaf seedlings. Longleaf occurs naturally in some areas, so they want to re-establish this species where feasible. Also planted last year were 100 bald cypress trees in a wet area.

Prescribed burning is conducted on a regular basis. "I value fire as one of the cheapest and best timber production tools," said Barnett. Usually he conducts his own burning, and did so on 90 acres in 1997.

Learning and Sharing

Barnett is proud that he has attended 12 of the 14 Landowner and TREASURE Forest Conferences and says he and Edna enjoy meeting others who have the same goals. Touring the property of other landowners is especially beneficial. "I always felt like I came away from there with new ideas I could do," he said.

The Kings hope that others are able to learn from their TREASURE Forest. Barnett stresses that he enjoys telling others about what they've accomplished, not to boast, but to motivate others to do the same. "I encourage other TREASURE Forest landowners to get involved with environmental education and share it with others. If it's hidden, you don't get the full potential," he said. Although their land does provide good supplemental income, Barnett is quick to point out that what they gain from it in the end is "more rewarding than money."

There are many ways that TREASURE Forest landowners share their experiences of forest management with others. Barnett and Edna King are using Fern Valley to help tell the story of what it means to own a TREASURE Forest.

LANDOWNERS LEGISLATIVE · ALERT

ALABAMA

by FRANK SEGO, Legislative Liaison, Alabama Forestry Commission

As we pound out this Legislative Alert, the weather has moderated, the dogwoods are in full bloom and the regular session of the Alabama Legislature has reached the halfway point.

In what started as one of the slowest sessions in many a year, the Legislature suddenly switched on a surge of power that often marks its posture in an election year. Legislators are ever so cautious at this time, walking on eggshells to avoid an alienation of affection from their constituents.

Much attention had been focused on the opening night volley by incumbent governor Fob James as he took his best paint brush and turned out a masterful canvas of his first three years in office. He continued his artistry by laying out an ambitious legislative agenda for the '98 session.

Administration Accomplishments

The governor was quick to point out that the people of Alabama have enjoyed increased funding in programs for children, prisons, law enforcement and Medicaid. He further underscored the fact that this had been accomplished with his favorite expression: "No New Taxes!"

Again, he hit hard at (1) the need for a $700 million road and bridge bond issue, (2) a constitutional amendment that would upgrade Alabama's vast state park system, and (3) a proposed bond issue in the neighborhood of $1 billion that would include $576 million for kindergarten through 12th grade, a vital part of this education package. None of these proposals had moved anywhere close to reality as the House and Senate gaveled toward the halfway mark.

Forestry Gets Attention

There was, however, a breakthrough that cracked the door on proposed bond issues, picking up the momentum of the session as James' measure to provide $52 million for agricultural and forestry research made its way through the House.

HB318, with Rep. Bill Fuller of LaFayette as the lead sponsor, proposed an amendment to the Constitution of 1901, authorizing the issuance of general obligation bonds in an amount not to exceed $52 million to improve existing facilities at Alabama colleges for agricultural, forestry and veterinary research. About $7.5 million would be dedicated for a new Forestry School building at Auburn University.

HB 319, also by Fuller and a host of others, would implement the provisions of the amendment to the Constitution, authorizing the Alabama Agricultural Development Authority to sell and issue such bonds depending upon ratification by the voters in the upcoming election.

Both measures were approved by the House at the end of February and were awaiting Senate approval in March. Similar proposals had failed to make it through the 1997 Legislature.

Forestry and the General Fund

As the Legislature turned its attention to a general fund budget for fiscal 1998-99, the Forestry Commission pondered its position in a budget that offers little relief as funds continue to be whittled away year after year.

State Forester Timothy C. Boyce was quick to remind legislators and budget writers that the Forestry Commission has the least amount of budgeted funds per acre among the 13 Southeastern states, yet Alabama is second only to Georgia in total forested acres in this region.

Boyce said budget reductions and increasing operations costs have forced a dramatic slash in personnel at Montgomery's state headquarters and in field personnel charged with the awesome responsibility of protecting and developing the state's 22 million acres of forest land.

As this writer so well knows, through 25 years of contacts with the Legislature, it takes one king-size effort to get the forestry story implanted in the minds of many legislators. Landowners and Forestry Association members have worked tirelessly with the Alabama Forestry Commission to give forestry its rightful place in the state's budget process.

The outcome of this year's budget depends on the leadership of the governor, the chairmen of the House Ways and Means Committee and the Senate Committee on Economic Expansion and Trade, but every citizen has a role in assisting the only state agency dedicated solely to the future of Alabama's great forest resource—a resource that touches every Alabamian every minute of the day. Each candidate for the 140 legislative seats should be reminded of this.

(It's worth thinking about, isn't it?)

(Continued on page 17)

Alabama Forestry Commission 1998-99 Season

Orders are now being taken for the 1998-99 season. Seedlings will be available for pickup after December 1, 1998. Orders are taken on a first-come, first-served basis, but seedlings will not be sold to customers outside the state of Alabama prior to July 15. To place an order, call the E.A. Hauss Nursery at (334)368-4854.

PINE & HARDWOOD SEEDLING PRICE LIST

PINES

	$ Per 500	$ Per 1,000
Loblolly—Improved		
Coastal Seed Source	$23	$35
Piedmont Seed Source ...	$23	$35
1.5 Generation Loblolly	$25	$39
2nd Generation Loblolly		
Piedmont Seed Source ...	$28	$44
Coastal Seed Source	$28	$44
Slash	$23	$35
1.5 Generation Slash	$25	$39
Longleaf	$39	$60
Longleaf—Improved	$45	$70

HARDWOODS

Species: Cherrybark Oak, Green Ash, Nuttall Oak, Shumard Oak, Water Oak, White Oak, and Yellow Poplar

Hardwood Prices

Orders of hardwoods totaling

100-1,900 trees	2,000 +trees
$21 Per 100	**$185 Per 1,000**

Total hardwood together to determine the price to use.

Minimum order of hardwoods seedlings is 100 per species.

Discounts for orders that are picked up at Hauss Nursery in Atmore, Alabama

Pines: 500	1,000 +	Hardwood orders totaling 2,000 or more
$1	$2 per thousand	$2 per thousand

WILDLIFE SPECIES PRICE LIST

LESPEDEZA

	$ Per 500	$ Per 1,000
Thunbergii	$26	$42
Bicolor	$26	$42

Discount for lespedeza orders picked up at Hauss Nursery

$1 - order of 500

$2 per thousand

OTHER WILDLIFE SPECIES

Autumn Olive, Chinese Chestnut, Crab Apple, Dogwood, Overcup Oak, Native Pecan, Persimmon, Native Plum, Redbud, Sawtooth Oak, and "Gobbler" Sawtooth Oak.

Wildlife Species Prices

25 trees	100 trees	500 trees	1,000+trees
$12	**$40**	**$150**	**$250/M**

Species may be mixed on your wildlife species order.

NOTE: The minimum number of seedlings per species is 5, and the minimum order is 25.

The Alabama Forestry Commission encourages planting for wildlife in our TREASURE Forest plans and also in the state's cost-share program plans. To enable landowners to locate tree seedlings that would be beneficial to wildlife, we have added new species to our nursery production. A one-time planting of tree seedlings that will bear fruit for wildlife to eat can be more cost-efficient for landowners than planting different grasses annually. **Refer to the brochure in the center of this issue for specific information on wildlife species available.**

Landowners Legislative Alert

Continued from page 16

The AFC and the VFDs

The Forestry Commission has always nurtured and enjoyed a relationship with the state's more than 900 volunteer fire departments and with the Rural Community Fire Protection Institute. The Alabama Forestry Commission has been instrumental in providing surplus equipment and vehicles as needed, and when available, for these fire departments.

Working with a Joint Interim Committee of the Legislature earlier this year, it was noted that new and useable equipment is being destroyed by the federal government because of civil liability that might occur from problems with the equipment once it is donated.

To combat this, the Forestry Commission introduced a bill that would provide civil immunity to those donating fire control property to the Commission. The AFC would also be released from liability for civil damages for personal injury, property damage or death resulting from a defect in the donated equipment.

Our next issue will detail the results of the above mentioned legislation and recap other forestry-related business from the '98 session. 'Til then...

Horse & Mule Logging in Alabama

by CHRISTOPHER W. TOMS, Graduate Extension Associate,
MARK R. DUBOIS, Assistant Professor/Extension Forester and
JOHN C. BLISS, Associate Professor/Extension Forester, Auburn University

Gee. Haw. Whoa. You have to listen closely as the skinner softly utters his command, "Back up, Jim." Big Jim, a 1,800-pound Belgian draft horse dressed with rigging to pull logs, is gently maneuvered in position to hook a pine log. With the large metal tongs hooked to the log, a soft command is given, "Pull, Jim." Big Jim leans into his yoke and another log begins its journey to the local sawmill as it is snaked through the woods with care. Sounds and scenes of the past? No. Gee, haw and whoa is common-day vocabulary for an estimated 50 horse and mule loggers in Alabama.

Before the mechanized tractor, animal loggers (horses, mules and oxen) were common on the Alabama landscape. Indeed many elder mechanized loggers of today began their careers holding the reins of a mule or horse. In the early 1930s Caterpillar put their first diesel tractor in the woods to perform log skidding operations. Mechanized skidding tractors greatly reduced costs for many logging operations and it wasn't long before horses, mules, and oxen were replaced with the tractor. Harvesting operations have been noisy ever since. However, horses and mules have managed to keep a foothold in Alabama's logging industry.

Alabama's 22 million forested acres offer a great opportunity for animal logging, but, until now, little collective knowledge about these operations had been assimilated. This lack of knowledge created a research opportunity at Auburn University's School of Forestry and Department of Agricultural Engineering that can benefit forest owners, forest managers, and animal loggers. The first step in this ongoing research effort is to determine the extent to which animal logging is used in Alabama. To do so, certain questions need to be answered: Who is logging with horses and mules? Where and for whom are they working? and, How are they getting their job done?

The first portion of the research project was a phone survey conducted with the loggers themselves. County agents of the Alabama Cooperative Extension System, county foresters of the Alabama Forestry Commission, and loggers provided the names of possible active horse and mule loggers in Alabama, and 33 animal loggers responded to the survey.

Survey Results

Horse and mule loggers are, for the most part, located in the northern one-half of the state (see map). These hilly and mountainous areas of the state, where oak-hickory and mixed pine-hardwood forests are abundant, are typically held in small tracts by the nonindustrial private owner. Such conditions offer ideal situations for horse and mule logging operations. According to our survey, animal loggers generally work in 20-acre mixed-pine and hardwood stands removing both sawtimber and pulpwood. However, we did find animal loggers harvesting timber in forest stands ranging from one acre to several hundred acres in size. Not all loggers work on nonindustrial private forestlands. We found a few animal loggers working on private industry and public lands.

As one might think, animal logging is often a family tradition. Eighty-two percent of the animal loggers learned the business from their fathers. Two-thirds of the surveyed loggers are working in the woods with family members: brothers, sons, sons-in-law, cousins, and wives. Further, third and fourth generation animal loggers in Alabama are common.

Most animal logging crews in Alabama are relatively small. Seventy-five percent of the crews consist of three people or less

Characteristics of Animal Loggers and Their Operations

	#	%
Age		
20-29	2	6
30-39	1	3
40-49	8	24
50-59	10	30
60-69	9	27
70+	3	9
Experience (years)		
<10	6	18
10-19	9	27
20-29	5	15
30-39	6	18
40+	7	21
Crew Size (persons)		
1	5	15
2	10	30
3	10	30
4	4	12
5+	4	12
Production (tons/year)		
<1000	4	12
1000-2999	5	15
3000-4999	7	21
5000-6999	4	12
7000-8999	8	24
9000+	5	15

performing felling, skidding, loading, and hauling operations. After trees are felled manually with a chainsaw, animals pull the logs to a landing. About half the animal loggers in Alabama use mules in their operations, while the other loggers use draft horses, specifically Belgians or Percherons. Most animal loggers load the logs with side-loading trucks and then drive the trucks to the mill at the end of the day. Day after day, each of these loggers is producing an average of 6,500 tons (approximately 2,600 cords) of wood per year.

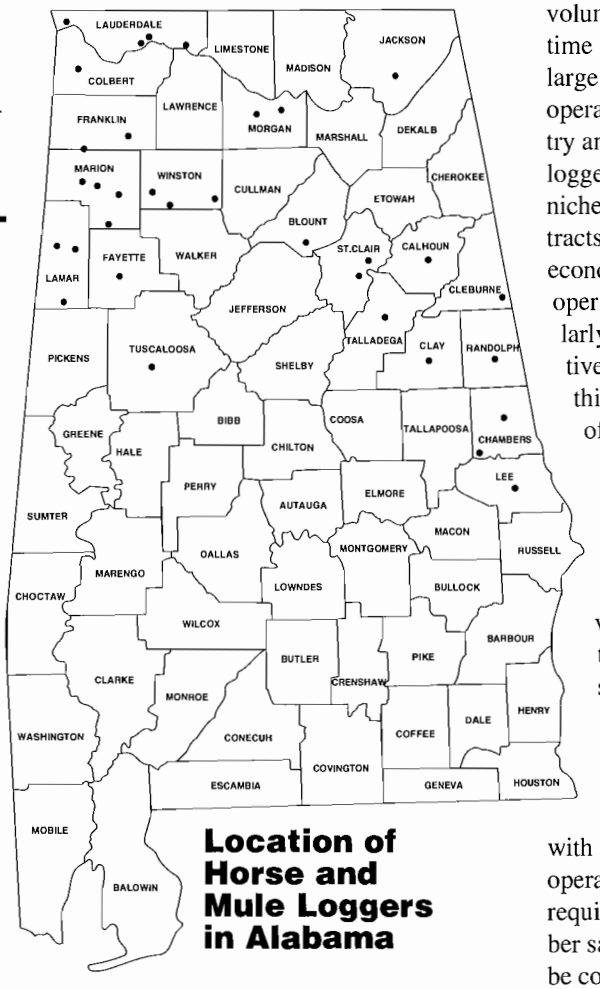
The Future of Animal Logging

Will there continue to be a demand for animal loggers? Will there be enough animal loggers in Alabama to meet the demand of forest owners and managers? The loggers themselves seem to be the first people who should be asked this question. Only six of 33 animal loggers responded positively when asked if they have had any down time in the past year because they didn't have any timber to cut. Others added that they are so busy that they are turning down requests for timber harvesting jobs from forest owners.

Who is going to take over for these older loggers when they retire? It seems as if Alabama already has a need for more animal loggers, yet two-thirds of the loggers surveyed are 50 years or older and over one-half of the survey respondents have at least 20 years of experience (see table). As these older, seasoned loggers retire, they may take with them a skill that has been passed down from generation to generation. Our research has found that at least 27 animal loggers have retired in the past five years. Most have retired because of age or health reasons. A few retired animal loggers have gone to using mechanized skidders because they could not find help experienced in working with animals. As one logger stated, "It's hard to find a skinner smarter than a mule." Over the next 10 to 20 years, many more loggers will be retiring, creating an opportunity and need for new animal loggers. Thirty-six percent of the loggers are certain that they will pass their business to someone else when they retire. These next generation loggers should not have much trouble being successful, but how will new animal loggers fare? Experience seems to be an important element in the success of an animal-powered logging operation.

Animal loggers, for the most part, have a positive outlook on the future of their profession. Two-thirds of the loggers feel that animal logging will always remain a part of Alabama's forest industry. Although the remaining one-third feels that "the younger generation is too lazy to work," and that "they just want to push buttons for a living," most loggers feel that there will always be a demand for animal logging and people to supply it. Many of these loggers have said that "there's always going to be small tracts of timber owned by people who really care about their land and there's always going to be people who love to work with horses." One logger is even more confident in the longevity of animal logging. He said over the phone, "Son, there'll be people logging with horses and mules long after the last skidder's rusted out."

Many of the loggers surveyed indicated that they are often working for older landowners who won't allow skidders on their land. But if one deals with reputable animal and mechanized loggers, there is no reason why these two logging systems cannot complement each other. In most cases animal loggers don't compete with mechanized loggers. Mechanized logging operations are capable of harvesting large volumes of timber in short periods of time and are most efficient when logging large tracts of pine plantations. These operations are typical of the forest industry and large private landowners. Animal loggers, on the other hand, find their niche working on small, privately owned tracts of forestland where logging is not economical for mechanized logging operations. Animal loggers are particularly adept at removing trees in selective thinning operations. In a selective thinning operation a forest owner is often concerned about potential damage to the trees and young natural seedlings that remain in their forests. Horses and mules can carefully maneuver logs between tight spaces of the selective harvesting operation with little damage to the remaining trees and young seedlings.



Location of Horse and Mule Loggers in Alabama

Planning a Timber Harvest

If you are a forest owner and planning a timber harvest, either with an animal or mechanized logging operation, remember that selling timber requires careful preparation. Every timber sale and harvesting operation should be covered with a contract. Often a consultant forester can be hired to help you plan a timber sale and harvesting operation. When considering hiring a logger or a consultant forester, you should check on reputations. If you are looking for an animal logger, we have developed a directory of all the animal loggers we know of working in Alabama. Your local county Extension office and county Alabama Forestry Commission office have copies of the directory.

If you know of an animal logger in your area, let us know so we can contact them and include them in our directory. We are also interested in hearing from you if you have used animal logging operations on your forested property. We can be contacted by mail at Extension Office, School of Forestry, 122 M. White Smith Hall, Auburn University, AL 36849-5627 or by phone at 334-844-1002.

Alabama Stumpage Price Trends

by DAOWEI ZHANG, Assistant Professor and Extension Forester and
JOHN BLISS, Associate Professor and Extension Forester, Auburn University

Forests dominate the landscape of Alabama and non-industrial private forest owners own 72 percent of the state's forestland. Generating income through timber sales is one of the primary objectives for many landowners. What they receive from timber sales significantly influences the rate of return of their timberland investment.

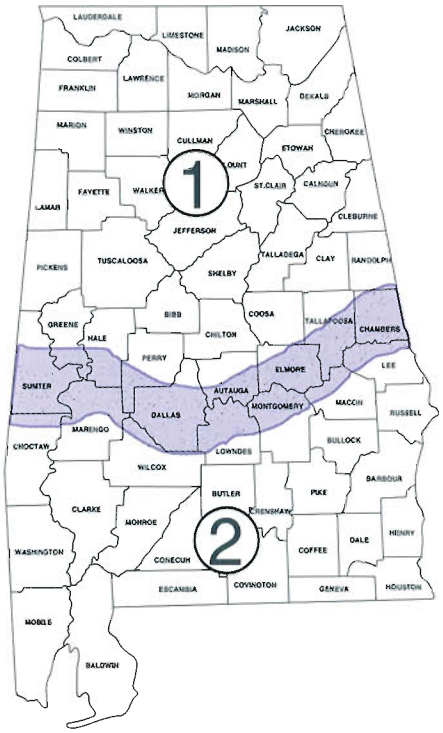
Non-industrial private forest landowners typically sell their timber on the stump to loggers or forest products firms. The price of standing timber is called stumpage. Since many landowners sell timber infrequently, they may not be well informed about the current level and future trend of stumpage. What is the trend of stumpage in Alabama? Is there any difference between Southern pine and hardwood? Between pulpwood and sawtimber? What is the rule in determining whether to harvest timber this year or next? This article provides some answers to these questions and to help non-industrial private forest landowners maximize their financial gains from timber sales.

Current Price Level

For many years no stumpage prices had been recorded in Alabama. This situation was changed when Timber Mart-South, Inc. started its stumpage reporting service for the 13 Southern states in 1977. Today, Timber Mart-South is published by the Daniel B. Warnell School of Forest Resources at the University of Georgia. The price data from Timber Mart-South is quarterly. Alabama is divided into two reporting regions: Southern Alabama and Northern Alabama (Figure 1). The shaded area between these regions is a transitional area where stumpage prices may more closely resemble one region or the other, depending upon the individual sale characteristics.

Timber Mart-South generates stumpage price data from timber buyers, consultants, and timber sellers, and a simple average price is reported for each product (pine sawtimber, pine pulpwood, hardwood sawtimber, hardwood pulpwood, etc.) in each region. This reporting method has several drawbacks: it does not report sale volumes or number of sales, and the selection of reporters is not systematic. Nevertheless, it is the primary reporting service in the South. The data used in this document are from Timber Mart-South.

Figure 1. **Timber Mart-South Reporting Regions in Alabama**



Forest landowners who sell timber infrequently or do not know the current stumpage price level should contact their county office of the Alabama Forestry Commission or the Alabama Cooperative Extension System. A quarterly stumpage update is provided by Auburn University and distributed to all county Extension offices around the state. However, the stumpage prices that individual landowners receive may not be identical to these reported (average) prices. Stumpage prices for individual forest tracts depend on species composition, location, harvesting conditions, sale methods, use of assistance foresters, and other factors.

Stumpage Price Trends

Southern Pine Sawtimber—In order to demonstrate the trend of stumpage price, it is necessary to distinguish real price from nominal price. Nominal price refers to the current price that includes inflation; real price refers to the price that excludes inflation. Figure 2 shows the trend in nominal Southern pine sawtimber stumpage prices. It indicates that the nominal stumpage price was high in 1980 and in 1992-97. Over the last 20 years, it increased on average at an annual rate of 5.7 percent. In 1996, stumpage prices were about three times of the price level in 1977.

Figure 2 also shows the real Southern pine stumpage prices calculated by dividing the nominal stumpage price by the producer price index. Since it adjusts for inflation, it represents the "true" stumpage price. In the 20 years between 1977 and 1996, much of the price increase is attributable to inflation while the real price increased at an annual rate of 2.0 percent. As a result, real Southern pine sawtimber stumpage prices increased 45 percent in the 20 years, from $153 (in 1982 $) in 1977 to $222 per thousand board feet (log rule, Scribner Scale) in 1996.

Hardwood Sawtimber—The trend of hardwood sawtimber stumpage is similar to that of Southern pine sawtimber (Figure 3). However, the real stumpage price for hardwood sawtimber appreciates much greater than the Southern pine stumpage. Over the 20 years from 1977 to 1996, the rate of real hardwood sawtimber price appreciated about 5.5 percent annually. As a result, real hardwood sawtimber stumpage nearly tripled in the last 20 years.

Southern Pine Pulpwood—Southern pine pulpwood stumpage prices also parallel those of Southern pine sawtimber (Figure 4). Over the 20 years from 1977 to 1996, the rate of real price appreciated about 1.5 percent annually, resulting in an increase of 33 percent in Southern pine stumpage.

Hardwood pulpwood—Perhaps the biggest (and, for some landowners, the most pleasant) surprise is the dramatic increase in real hardwood pulpwood stumpage. Figure 5 shows that real hardwood pulpwood prices increased steadily and more than tripled in the 20 years between 1977 and 1996. This means that the real hardwood pulpwood stumpage prices appreciated at an annual rate of 6.4 percent.

A Misperception about Pulpwood Stumpage

Forest products prices have gone up in the last 20 years, outpacing all other natural resources. However, there has been a misperception about pulpwood stumpage prices. Based on timber sale data from national forests from 1920 to 1975, several studies concluded that real sawtimber stumpage had been going up, while real pulpwood stumpage had not. This is certainly not true in Alabama in the last 20 years. Data from Timber Mart-South suggests that pulpwood stumpage increased at least as fast as sawtimber stumpage in the last 20 years.

Why Stumpage Price Increases?

Many analysts have observed that the stumpage price increase in the last few years in the South coincides with the cutbacks in timber production from public forests in the Pacific Northwest. It seems reasonable to attribute the increase in Southern stumpage to the reduction of timber harvesting in the Pacific Northwest. However, there is a more fundamental reason behind the increase in stumpage price in the long run.

It has long been recognized that, in the long run, percentage change in stumpage price plus percentage change in growth (namely, growth rate) equals the interest rate of the national economy. To understand this result, one needs to recall that there are benefits and costs of holding timber for an extra year. The benefits are

(Continued on page 31)

Figure 2. **Southern Pine Sawtimber Stumpage Prices**

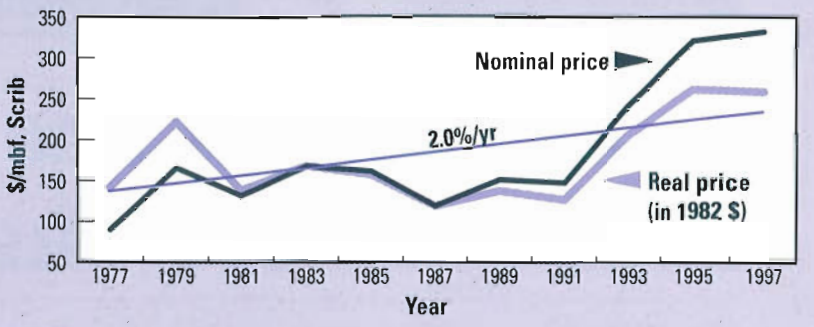


Figure 3. **Hardwood Sawtimber Stumpage Prices**

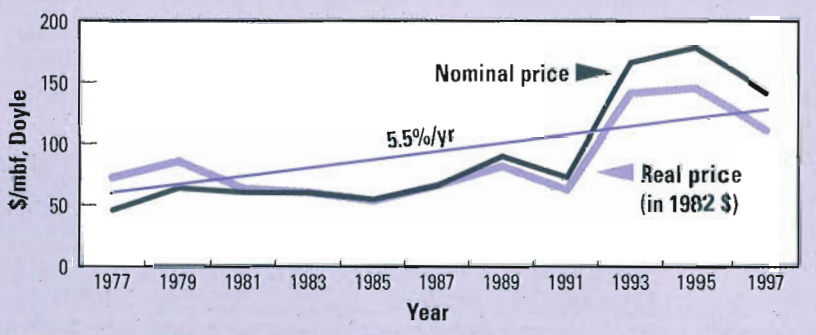


Figure 4. **Southern Pine Pulpwood Stumpage Prices**

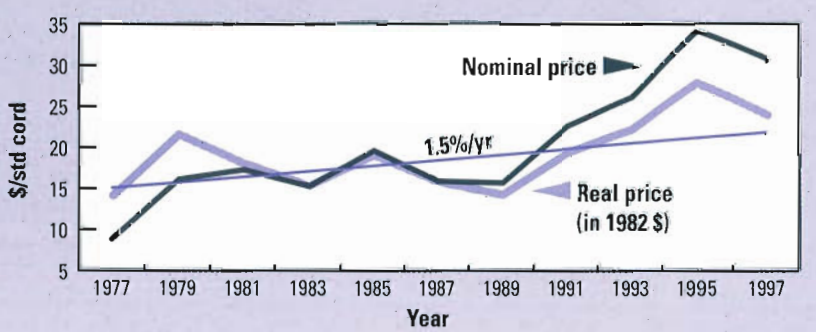
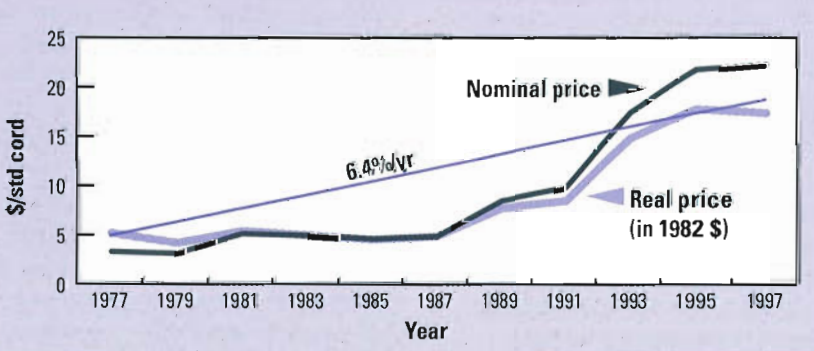


Figure 5. **Hardwood Pulpwood Stumpage Prices**



Rooted in the Past, Managed for the Future

by MADELINE HILDRETH, Forest Management Specialist, Alabama Forestry Commission

Smith and Sons is a family tradition. Six generations of Smiths have enjoyed the profits of the family property. Abram Smith began farming the land in the mid 1800s as a slave. Abram, a slave in Virginia, came to Alabama when he was purchased by Elem Smith. After a hard day's work in the field, he managed to farm a plot of land at night as a sharecropper. A helper held the lantern during the dark nights to provide enough light.

After his owner's death, Abram Smith helped raise Elem's two sons. When the boys came of age, he sharecropped, giving them a portion of his crops. Unfortunately, for financial reasons, some of the land had to be sold to someone outside the family. Through tenacity and hard work, Abram Smith had managed to save some money. He approached the new owner and purchased 230 acres.

During his lifetime, Abram Smith farmed the Greene County land as a slave, a sharecropper and finally as property owner. His family continued the tradition, row cropping the rolling hills until the early 1980s. When Andrew Smith, Abram's grandson, bought out the other heirs, they began to manage the land more intensively. Andrew and his six sons, Andrew, Jr., Jimmy, Bennie, Scott, Hodges and Carl, incorporated the farm as Smith and Sons and worked together to manage the property. According to son Hodges, "We had always had a family business together; this was just another business." Andrew Smith and each of his sons is required to participate in the planning and implementation of all projects. Duties are assigned according to individual interests and talents. Hodges Smith, a ranger with the Alabama Forestry Commission, oversees the forestry aspect of the property. He wrote the forest management plan, but depends on his brothers for its implementation. The property was certified as a TREASURE Forest in 1995.

Left to right: W. Scott Smith, Carl E. Smith, Hodges Smith, Andrew Smith, Sr., Andrew Smith Jr., Bennie L. Smith and Jimmy H. Smith.

All of the row crops are gone now. The old fields have been converted to pine trees. Some areas naturally regenerated; others were planted. The tree planting was, not surprisingly, a family effort. So is the prescribed burning program that was started a few years ago. The commercial catfish ponds require frequent attention, and each brother plays a role in their upkeep. Deer hunting is a favorite pastime when schedules permit. Maintaining wildlife openings and planting food plots is another family activity.

Andrew Smith and his six sons all live on the property. The gently rolling hills are punctuated with the beautiful homes. The homebuilding, like all projects, was done by the Smiths together. This summer these homes will be visited by distant relatives. Nearly 300 people are expected to attend the family reunion. All are descendants of Abram Smith. Plans are for the older generation to tell Abram's story so the younger cousins will understand their roots. The Smiths want to be sure his story and his love of the land are passed on to future generations.

On top of a knoll sits the family cemetery. Abram Smith's tombstone serves as a reminder of the legacy he left. Across the road from the cemetery are young pine plantations where the great-great-great grandchildren run and play. They are reminders that, though rooted in the past, Smith and Sons is managed for the future.

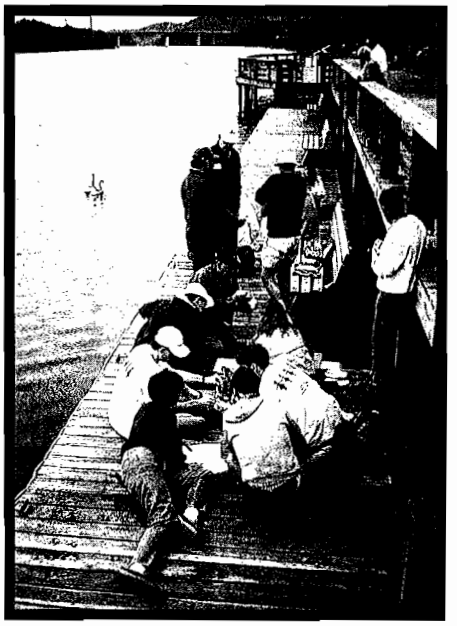
Alabama Water Watch

by PAT BYINGTON, Director, Alabama Environmental Council

How many TREASURE forest owners in Alabama do not have a lake, swamp, creek or stream running through their forest? Answer: Very few.

The numbers are quite remarkable. Alabama is a water-rich state with 75,000 miles of streams, 3.6 million acres of wetlands, and 490,000 acres of lakes, ponds and reservoirs. Alabama waters have some of the highest aquatic biodiversity and uses in the world, with our state ranking second nationally in the variety of fishes and navigable waterways.

The connection between forestry and water quality is inseparable. Without healthy forests, water quality and biodiversity will decline. In many cases Alabama's forests are the last line of defense against erosion problems caused by poor construction and different agricultural practices. Our forest is also responsible for filtering out pollution in its role as "nature's lungs."



Members of the Coosa River Society take part in an Alabama Water Watch training workshop.

So, how can a TREASURE Forest owner best protect Alabama's waters? Answer: Become an Alabama Water Watch (AWW) monitor.

Alabama Water Watch is a statewide program founded in 1992. Its goal is to help citizens monitor and test the quality of our state's rivers, lakes and streams. In five short years the group has built a coalition of 50 active citizen groups monitoring 100 rivers and streams at 200 different sites.

It is easy to get involved. Through a six-hour workshop (half of the workshop time is spent in the field with hands-on monitoring), Alabama Water Watch can train and certify volunteers as "water testers," enabling citizens to monitor and technically evaluate their lake, stream or river.

Can a TREASURE Forest owner trained as a citizen monitor make a difference? Answer: Yes.

Besides monitoring trends, a forest owner could actually solve potential environmental and health problems. For example, in the summer of 1996, a citizen monitor from the coastal plain of Alabama was trained in bacteriological testing at an AWW workshop and found high concentrations of *E.coli* in the stream near his home. By sampling in various stretches of the stream, he determined that the problem was coming from a waste water treatment plant. The plant had been damaged during Hurricane Opal and was operating out of compliance. Working with the Alabama Department of Environmental Management, the findings were confirmed and the problem was resolved.

We are blessed in Alabama with an abundance of water and the responsibility to be good stewards of our natural heritage. Becoming an Alabama Water Watch monitor is another way a TREASURE Forest owner can protect, conserve and preserve Alabama's environment.

How You Can Get Involved

If you are interested in getting involved in AWW write to Alabama Water Watch, Department of Fisheries, Auburn University, AL 36849; or call 1-888-844-4785.

Become a TREASURE Forest Landowner 6 Steps to Success

Anyone owning 10 or more acres of forestland can be considered for the certified TREASURE Forest award. To be eligible, a landowner must do the following with respect to all their forestland in Alabama:

1. Identify one primary and at least one secondary management objective for the property based on the following list of choices: Timber Production; Wildlife; Recreation; Aesthetics; Environmental Education.
2. Possess or acquire a written multiple-use management plan for the property. Your local Alabama Forestry Commission office can help you identify options for obtaining a written management plan if one does not exist.
3. Actively practice multiple-use management on the property. Your local office of the Alabama Forestry Commission can supply you with information on the level of management activity necessary.

Once these items are in place, the following must occur to earn the award:

4. The property must be nominated by someone associated with one of the member agencies or groups of the Alabama Forestry Planning Committee. You may contact them and suggest a nomination if you feel your property or that of someone you know qualifies for the award.
5. The property must be inspected by a registered forester and wildlife biologist. Your local Alabama Forestry Commission office will arrange the inspection.
6. The nomination and inspection report must be submitted to the TREASURE Forest Subcommittee of the Alabama Forestry Planning Committee for review and approval.

If you would like to be considered for the certified TREASURE Forest award, or know of someone else who may qualify, contact your local office of the Alabama Forestry Commission or other member agency/group of the Alabama Forestry Planning Committee. These organizations are listed on page 2 of this magazine. They will be happy to assist you with the certification process.

Practical Forestry Aesthetic Practices in the South

by BECKY BARLOW, Forester, Weyerhaeuser Company

As urban areas continue to expand into the countryside, many landowners are finding that their once secluded tract of forestland is now located next to a new subdivision, commercial development, or major highway. Due to the nearness of forestland to urban uses, many landowners are discovering that the management of their property, especially timber harvests, may be subject to increased public scrutiny.

This potential for conflicting land use values has prompted many landowners to manage their forests not just for traditional uses such as timber and wildlife, but also for visual quality. This article discusses what makes a particular tract of land aesthetically sensitive, and offers some simple, low-cost methods of managing your forest for increased visual quality.

Streamside management zones and wildlife corridors can be used to break up large harvest units.

Determining Sensitivity

Many factors can make a tract of land aesthetically sensitive; however, the most important aspects to consider are 1) adjacent land uses, and 2) location of the viewer in relation to the harvest area.

Adjacent land uses can affect the level of sensitivity of your tract of timber, and often they are put into three categories: high, moderate, and low sensitivity. Areas of high sensitivity include tracts that are adjacent to things like major recreation areas, major highways, and churches. These areas often have a lot of "out-of-town" traffic. Tracts considered moderately aesthetically sensitive are those next to secondary roads and developments. Areas of low sensitivity are those likely to be seen by mostly local traffic, such as on county and woods roads. It is important to remember that the techniques discussed in this article are most effective when used in areas of high or moderate sensitivity and not necessarily on every harvest setting. Timber harvests in low sensitivity areas are often best suited for common sense use of Best Management Practices.

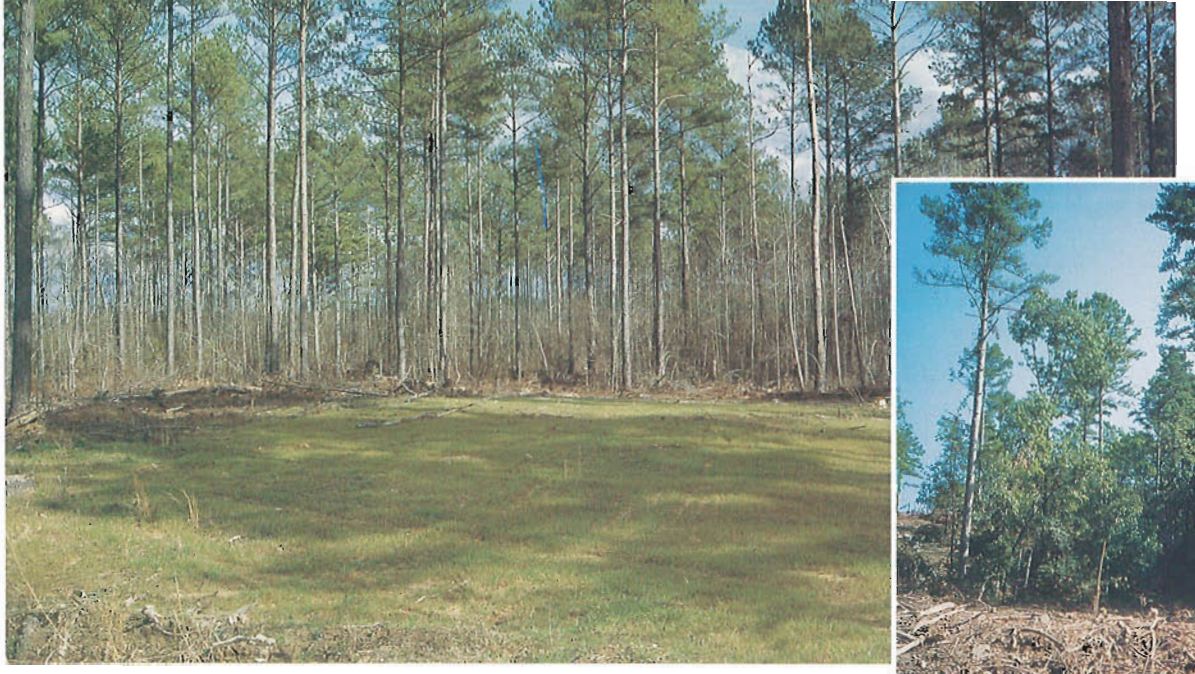
Another aspect that makes a tract visually sensitive is the position of the viewer in relation to the harvest unit: where the viewer is in relation to the stand, or whether the viewed stand is in the foreground, middleground, or background. A stand may be considered sensitive when in any of these locations, but for different reasons.

A stand considered to be in the foreground is usually less than one-half mile from the viewer. These stands are often located along roadsides, other travel corridors such as hiking trails, or next to places such as churches or recreation areas. Foreground views are of the greatest concern in flat terrain, because all the details are easily seen—making slash, stumps, brush piles and rutting main concerns. One way to eliminate the problem of visible brush and slash is to have the logger drag all debris back into the tract about 60 feet, or until it can no longer be seen from the road.

Stands in the middleground are usually about one-half to five miles from the viewer. On these stands, the details such as slash and stumps are less important. However, the general size and shape of a harvest unit becomes more noticeable. Color on these settings becomes more noticeable, too, because harvest areas are usually brown and stand out against any surrounding green trees.

Tracts that are greater than five miles from the viewer are considered to be in the background. Little to no detail can be determined when these tracts are harvested, such as color or texture. The most important things to consider when harvesting units in background situations are the size and shape of the harvest unit. It is important to make sure that the size is not too large, so that it does not overpower the surrounding landscape. Also important to consider is

A buffer can range from 50 to 300 feet, depending on age and species of plant material.



Reducing slash in areas where visual quality is a concern can be achieved by having the logger drag the debris back into the tract. This has been done in the example above; the area has also been seeded in grass.

the shape of the harvest unit. It should be as "natural" looking as possible by blending in with surrounding areas.

Managing for Aesthetics

There are many simple and low-cost options that private landowners have to improve the visual quality of timber harvests on their land. Even things done for basic forest management can be effective in enhancing the scenic beauty of your property without any extra effort. For instance, by simply considering the location of your wildlife corridors and streamside management zones (SMZs) early in your harvest planning, you can complement efforts to minimize the visual impacts of timber harvesting. Other techniques that can be used include tree retention, buffers and screens, reducing logging slash, avoiding color contrasts, and harvesting in "natural" patterns.

Tree Retention

Many studies have shown that the public prefers partial or select harvests over clearcuts; however, it is not always best from a silvicultural standpoint just to thin a tract and never clearcut. In those cases where you do clearcut a visually sensitive stand of timber, it is good to leave groups of standing live trees. In nature, trees usually grow in clumps of at least three or four, and not individually scattered across the landscape.

An easy way to mimic nature's growth patterns is to use wildlife corridors and SMZs placed so that they break up the apparent size of the harvest unit or make the harvest unit look smaller than it is. Another way this can be done is by leaving several rows of trees along ridge tops so that the hillside does not look "scalped." Of course, if you do not want your timber harvest to be viewed at all from a road or trail, it may be best to use a buffer or screen.

Buffers and Screens

Contrary to popular belief, the public usually has a positive opinion of buffers or screens, if they are sufficiently wide to prevent the harvest unit from being viewed. Thin rows of trees are not effective because they look messy and unkempt, giving the public the impression of a sloppy, unprofessional job. This is not to say that a buffer has to be really wide to be effective. The width of a buffer may range from 50 to 300 feet depending on age and species of the plant material in it. A buffer of trees that are of a uniform age and species may need to be wider than one of uneven age mixed height plants.

It is important to remember that a buffer does not have to be a "set-aside" or a piece of land that you will never harvest again. It may be important that you manage a buffer as a separate stand so that you can keep it healthy. Once the harvest unit behind the buffer has been replanted and allowed to grow a few years, you may decide to harvest and replant the buffer stand. If you do plan to manage it in this way, you may want to consider leaving the buffer large enough to warrant additional harvests, or plan to harvest it with an adjacent stand.

Logging Debris

When a harvest unit extends to a road or other area where visual quality is a concern, stumps, snags, brush piles, and limbs that are visible should be kept to a minimum. Although we often want to leave slash for wildlife and soil nutrients, it gives the tract a messy appearance—especially in foreground settings. As mentioned earlier, an effective way to deal with slash is to have the logger drag debris back into the tract for about 60 feet or until it is no longer visible. Visible slash can also be minimized by locating the landing out of sight and away from major roadways. Using fire to remove residual material is very effective, but you must consider the immediate negative impact that the black color

(Continued on page 31)

Test Your Forestry IQ

by TILDA MIMS, Forest Education Specialist, Alabama Forestry Commission

1. T F Prescribed burning is an effective fire prevention tool in Alabama's forests.

2. T F For maximum survival rates, it is best to prune roots of pine seedlings as you plant them.

3. T F The TREASURE Forest program was initiated by President Theodore Roosevelt during the creation of the U.S. Forest Service.

4. T F Sometimes dead trees are purposefully retained to provide habitat for wildlife.

5. T F Best Management Practices (BMPs) are mandatory federal guidelines governing the use of logging operations near water.

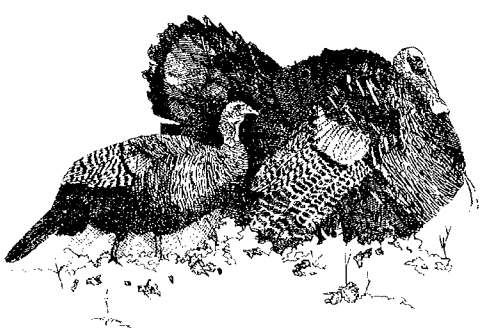
6. T F The Southern pine beetle destroys more trees each year than wildfires.

7. T F The state tree of Alabama is the Southern yellow pine.

8. T F The sawtooth oak is a popular wildlife species because it produces acorns in 7-10 years.

9. T F The most common cause of wildfires in Alabama is woods arson.

10. T F The wild turkey population of Alabama has declined in the past 50 years due to loss of habitat.



11. T F Alabama is second only to Georgia in the number of forested acres.

12. T F Hardwoods are sensitive to fire because their bark is thin.

13. T F The marks made by deer on trees when rubbing their antlers is called a dibble.

14. T F Closely spaced growth rings on a tree indicate a period of slow growth.

15. T F The longleaf pine grows well only in the southern portion of our state.

16. T F Plywood was first invented by the early Egyptians.

17. T F Less than one percent of a tree is used to generate new tissue.

18. T F Every year in the United States, each person uses tree products equal to the wood of a 100-foot tree.

19. T F The magnolia has the largest tree buds.

20. T F Forestry is the science of developing and taking care of the forest.

21. The first spitballs—a tricky pitch thrown by pitchers in the days of Babe Ruth—resulted from the seeds of what tree?
- a. Slippery elm
- b. American beech
- c. Hickory
- d. American chestnut

22. Forests make up about how much of Alabama's 32 million acres?
- a. 22 million
- b. 15 million
- c. 10 million
- d. 25 million

23. What is the fastest growing commercial wood tree?
- a. Silktree
- b. Paulownia
- c. Water oak
- d. Virginia pine

24. What trees were used by native Americans to make bows?
- a. Tulip poplar and ash
- b. Osage orange and hickory
- c. Hickory and ash
- d. Elm and osage orange

25. What is the total cubic feet of a cord of wood?
- a. 128 cubic feet
- b. 138 cubic feet
- c. 77 cubic feet
- d. 89 cubic feet

26. What is the most fire resistant tree in Alabama?
- a. Sweetgum
- b. Loblolly pine
- c. Longleaf pine
- d. Hophornbeam

27. What is most destructive insect pest of pine seedlings in recently cutover pine lands?
- a. Pales weevil
- b. Southern pine beetle
- c. Turpentine beetle
- d. Shoot beetle

28. Alabama's Best Management Practices for Forestry recommends that the streamside management zone be at least how many feet from a definable bank?
- a. 25
- b. 30
- c. 35
- d. 40

Matching

There are over 5,000 forest products, even more when considering secondary products. Match the trees in the left column with the product they help produce.

1. Poplar	A. Artificial limbs
2. Ash	B. Butcher's blocks
3. Buckeye	C. Cabinet wood
4. Dogwood	D. Baseball bats
5. Hickory	E. Bentwood rockers
6. Basswood	F. Wheel hubs
7. Cherry	G. Axe handles
8. Elm	H. Venetian blinds
9. Beech	I. Matches
10. Sycamore	J. Golf club heads

Answers on page 27

Answers

True/False

1. True. Prescribed burning is the controlled use of fire to achieve forest management objectives. These objectives include reducing logging debris, reducing buildup of dead and fallen timber that poses wildfire hazards, controlling unwanted vegetation, improving visibility and improving wildlife habitat.
2. False. Root pruning may make tree planting easier but may cause seedling loss later on.
3. False. The Alabama Forestry Planning Committee sanctioned development of the TREASURE Forest program in 1973. The first TREASURE Forests were certified in 1975. The program went on to gain national recognition as the model for the National Stewardship Program.
4. True. Standing dead trees or "snags" make excellent habitat for birds and other wildlife.
5. False. BMPs are voluntary guidelines for use in logging operations near water.
6. True. This bark beetle destroys 43 times more trees than fire each year.
7. False. Alabama's official state tree is now the longleaf pine as designated by Act. No. 97-548, which was signed by Gov. Fob James on the final night of the 1997 Legislative Session.
8. True. Most other oaks take about 25 years or more to begin producing acorn crops.
9. True. Careless outdoor burning and woods arson account for most of Alabama's wildfires each year.
10. False. Our wild turkey population has increased from 11,600 in 1940 to more than 500,000 in 1993.
11. True. Alabama has 21.9 million acres of forestland compared to Georgia's 23.6 million. The state of Oregon is third, with 21.6 million acres.
12. True. Wildfire can permanently damage hardwood stands. Prescribed burning is only done in hardwoods under special circumstances.
13. False. They're called "rubs." A dibble is a tool used to plant seedlings.
14. True. The wider the growth rings, the faster the tree is growing.
15. False. Although it is much more common in the southern part of the state, the range of longleaf pine includes parts of north Alabama.
16. True. Early Egyptians invented plywood by combining planks and timbers with grains running in different directions to equalize strength. Glue that was stronger than the wood itself wasn't invented until after WWI so the cathedrals of Europe had to rely on arches and trusses.
17. True. The cambium layer (underneath the bark) is the only place the tree makes new wood.
18. True. Each person uses enough wood products to make up a tree 100 feet tall and 16 inches in diameter.
19. True. The horsechestnut and the beech tree also have large buds.
20. False. Silviculture is the science of developing and taking care of the forest. Forestry is a complementary science emphasizing management, protection and use of the forest.

Multiple-Choice

21. A. Pitchers would chew slippery elm seeds, then rub the liquid into the baseball. The resulting pitch was very hard to hit.
22. A.
23. B. Paulownia is the fastest growing commercial wood tree in America. A seedling can grow 20 feet in one growing season.
24. B. Osage orange and hickory for bows; tulip poplar, ash and sourwood for arrows.
25. A.
26. C. The longleaf's thick bark and dense concentration of needles around a seedling's terminal bud make this species very resistant to fire.
27. A. These weevils are attracted by the odor of fresh pine resin and can quickly invade recently logged areas.
28. C. However, a landowner's personal management objectives, on-site conditions or stream sensitivity may require SMZs wider than 35 feet.

Matching

1. I
2. D
3. A
4. J
5. G
6. H
7. C
8. F
9. E
10. B

Scoring

Give yourself 2 points for each correct true-false question, 5 points for each correct multiple choice question, and 2 points for each correct matching question.

100-80 points:	Congratulations, you know a lot about forestry!
79-60 points:	Not bad, you are learning!
59-30 points:	Study up and try again!
29-0 points:	It's never too late to learn!

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SNAKES OF ALABAMA:
Fact and Fiction

by MARK A. BAILEY, Zoologist, The Nature Conservancy/Alabama Natural Heritage Program

I still remember the pencil-sized water snake I caught in the creek behind my school. It generated the desired effect among the more squeamish of my 11-year-old classmates, and I was about to turn it loose when the principal arrived with a shovel. It soon became obvious that in his view of the world, the only good snake was a dead snake. Suddenly, I was responsible for this animal's life, and I tried. I knew enough to point out the round pupils, lack of facial pits, and the double row of scales under the tail. No way was it a cottonmouth, I half explained and half begged, but he smashed the harmless creature in front of my friends and me. He never told us why it had to be done. I then realized that this big man was *afraid* of my little snake. The real tragedy that day was the lesson of fear learned by the children.

Unfortunately, thousands of snakes are unnecessarily killed in Alabama each year by people who simply do not know any better. Most people, once equipped with a little knowledge and understanding of these interesting animals, realize that their fears are virtually groundless.

▲ ***Found under logs and rocks in almost any patch of hardwood forest, the little ringneck snake is one of Alabama's most abundant species.***

The fear of snakes is an old prejudice, perpetuated through superstition and myth. It is time that we stop judging these fascinating reptiles on the basis of folklore and ignorance.

▲ ***Perhaps our most frequently encountered venomous snake, the copperhead relies on its superb camouflage to avoid detection.***

MODERN MYTHS AND FOLK TALES

Folk tales about snakes are handed down from generation to generation and include such things as snakes that charm prey, swallow their young for protection, and suck milk from cows. These are interesting and amusing stories, but unfortunately, many people still believe them. Let's look at a few of the more common ones.

The "Big Snake"—Probably the most common exaggeration about snakes is size. Like deer and bass, snakes are almost always described as larger than they really are. How many times have you heard of a snake that stretched all the way from one shoulder of the road to another? The truth is, only five species in Alabama ever attain a length of seven feet: the gray rat snake, Eastern coachwhip, Eastern indigo snake, the three subspecies of pine snake, and Eastern diamondback rattlesnake. Most of our snakes are less than three feet long, and a few, such as the worm snake and pine woods snake, are sometimes even mistaken for worms.

"Hoop Snakes" and "Stinging Snakes"—When frightened, hoop snakes will bite their tails and roll like a wagon wheel after you, and they sting you with a "stinger" in their tail, or so the tale is told. Of course, snakes are not anatomically equipped for rolling and there are no reliable accounts of this ever occurring. The hoop snake myth seems to be associated with mud snakes and rainbow snakes. Both have a sharp (but harmless)

▲ ***A relative of the cobras, the venomous coral snake's bold markings serve as a warning. This snake is rare in Alabama, but two other harmless species, the scarlet snake and the scarlet kingsnake, closely resemble it.***

spine-like tip on their tails, and they will occasionally lie in a loose coil shaped like a hoop, but they slither away from danger like other snakes.

The "Spreading Adder"—Some people believe that hognose snakes (also called spreading or puff adders) are venomous, or else mix poison with their breath and can kill a person at a distance. A confronted hognose snake will puff itself up and hiss, and it will occasionally strike, but always with a closed mouth. Then it plays dead. They simply don't bite, and their breath is harmless.

The "Nest of Cottonmouths"—Thanks in part to a dramatic scene in the movie *Lonesome Dove,* this is one of the most widespread and commonly believed of the snake myths. The modern version involves a water skier who gets his or her legs tangled up in a "nest" of snakes, and is either bitten and killed or pulled down and drowned. Although snakes may gather at hibernating dens or at streamside basking sites in the spring and fall, they simply don't occur in such swarms in the water.

The "Toilet Snake"—In this story, some poor soul gets the fright of his or her life when a large snake pops up out of the toilet. Actually, this one is not a myth, at least not always! The harmless gray rat snake ("chicken snake") is usually the culprit, and it's likely just ventured up the plumbing from a buried septic tank. This has actually been documented several times.

REALITY

Alabama is blessed with snakes, something our tourism literature consistently overlooks. Of the United States' 110 or so species, we have 42; some New England states have only a dozen. In fact, no other state east of the Mississippi can boast such a diversity. Now that we have something to be proud of, let's look at some snake facts.

Defense—Like most animals, snakes will defend themselves if threatened, injured or captured. Many snakes release foul-smelling anal secretions (I would much rather be bitten than "musked" by some of our snakes). Others attempt to frighten through bluffing: flattening their heads, rattling their tails or hissing. In self defense, some will bite, but except in the case of our six venomous species, the resulting wounds are superficial. Our nonvenomous snakes all have short, thin, very sharp teeth that leave clean wounds no worse than a briar scratch, and which carry no threat of disease. Our five pit vipers deliver venom by hypodermic injection through large hollow fangs. The venom is needed for killing prey, and delivery is frequently withheld in bites of self-defense. These are so-called "dry" bites. Remember this: unless you attempt to harm or capture a snake, your chances of being bitten are less than your chances of being struck by lightning.

Habitat—Our native snakes occupy a wide range of habitats, including fields, forests, wetlands, ponds, lakes, streams, rocky hillsides, farmland, vacant lots and residential neighborhoods. Within those habitats, snakes may travel along the ground, swim, climb trees and bushes, and crawl below ground. Although some snakes do burrow, most "snake holes" are actually produced by chipmunks, mice, shrews and other small mammals. Some snakes use these burrows for food, shelter and egg laying sites, but most species don't dig holes.

Food—All snakes are predators, but depending on size and species, they feed

▲ ***Both of these large snakes are found in similar habitats and are state protected. The Florida pine snake, left, is found in longleaf pine woods in south Alabama. Because its tail resembles a braided whip, some people mistakenly believe the Eastern coachwhip, right, whips its victims to death. This one is near the entrance to a gopher tortoise burrow.***

on a variety of prey. Species such as the king snake and gray rat snake consume great numbers of rodents. Queen snakes eat only crawfish. Pine woods snakes eat other reptile eggs. Rainbow snakes eat mostly eels. Indigo snakes have a taste for rattlesnakes. Hognose snakes almost exclusively eat toads. Garter, redbelly and brown snakes consume garden pests such as slugs. All snakes swallow their meals whole.

Snakes and People—Venomous snakes are always a concern, but it is a simple matter to learn to recognize our six species. The more secretive and rarer species can be easily identified through use of one of the field guides listed at the end of this article. Once we are able to put a name to something and understand its nature, we tend to lose our fear of it.

Snake Phobias—A few people have such an overwhelming, irrational fear of snakes that it actually restricts their lifestyles. This fear, called ophidiophobia, may cause people to avoid any place where there is the slightest chance that a snake might be found. Some cannot enjoy being out in their own back yards, let alone a walk in the woods or a swim in the lake. Many victims of this phobia cannot look at a photograph of a snake without experiencing acute anxiety, and few could bear to read this article! If you know such a person, urge them to tell their doctor and let them know that effective treatment is available.

Conservation—Six of our rare snakes receive protection under Alabama's Nongame Species Regulation. They are protected as important members of our native wildlife communities and as valuable natural resources. These are the Eastern coachwhip, Southern hognose snake (not the commoner Eastern hognose), Florida pine snake, black pine snake, Eastern indigo snake, and Gulf salt marsh snake. Two of these, the Southern hognose and Eastern indigo, are feared no longer in existence in Alabama. If you know of occurrences of these snakes in the wild, contact the Natural Heritage Program at (334) 834-4519, ext. 24. None of these may be collected, killed or held in possession except under special permit. Although it is not illegal to kill common snakes, there is generally no reason for anyone to do so, with the possible exception of a venomous snake near a dwelling.

Snakes need our help, as do songbirds, game animals, and practically every living thing nowadays. Even our commoner snakes are nowhere near as abundant as they were a few decades ago. Direct persecution and road mortality take their toll, and imported fire ants are suspected of doing great damage to ground-nesting species (by eating the eggs). Still, we probably have our greatest effect on snakes through habitat alteration. The indigo snake provides an example. Last documented from the wild in Alabama in 1954, it formerly occurred in extensive longleaf-dominated sand ridge habitats across the extreme southern part of the state. Unfortunately, few large undisturbed tracts remain, and if this large and beautiful snake is still with us, it's going to be in what is left of these habitats in southwestern Alabama.

Snakes will no doubt remain disliked by many people for a long time, but the intolerance is undeserved. One of the best things we can do for these fascinating animals is to first change our attitude toward them from one of fear to understanding. Our own prejudices must be overcome if we are to leave our children a legacy of appreciation and respect for all creatures.

▲ ***The gray rat snake, or "chicken snake" is our most common large snake and is found statewide. The cloudy appearance of the eye indicates it will soon shed its skin.***

ALABAMA'S 24 SNAKE SPECIES

NON-VENOMOUS (COLUBRID SNAKES)

Carphophis amoenus ssp ..... worm snake
Cemophora coccinea copei ..... scarlet snake
Coluber constrictor ssp ..... black racer
Diadophis punctatus ssp ..... ringneck snake
Drymarchon corais couperi ..... Eastern indigo snake
Elaphe guttata guttata ..... corn snake
Elaphe obsoleta ssp ..... rat snake
Farancia abacura ssp ..... mud snake
Farancia erytrogramma erytrogramma ..... rainbow snake
Heterodon platirhinos ..... Eastern hognose snake
Heterodon simus ..... Southern hognose snake
Lampropeltis calligaster rhombomaculata ..... mole snake
Lampropeltis getula ssp ..... black/Eastern/speckled kingsnake
Lampropeltis triangulum ssp ..... scarlet kingsnake/milksnake
Masticophis flagellum flagellum ..... Eastern coachwhip
Nerodia clarkii ..... Gulf salt marsh snake
Nerodia cyclopion ..... green water snake
Nerodia erythrogaster ssp ..... plainbelly water snake
Nerodia fasciata ..... banded water snake
Nerodia floridana ..... Florida green water snake
Nerodia rhombifer rhombifer ..... diamondback water snake
Nerodia sipedon pleuralis ..... midland water snake
Nerodia taxispilota ..... brown water snake
Opheodrys aestivus ..... rough green snake
Pituophis melanoleucus ssp ..... Northern/Florida/black pine snake
Regina rigida sinicola ..... glossy water snake
Regina septemvittata ..... queen snake
Rhadinaea flavilata ..... pine woods snake
Seminatrix pygaea pygaea ..... black swamp snake
Storeria dekayi ssp ..... brown snake
Storeria occipitomaculata occipitomaculata ..... red-bellied snake
Tantilla coronata ..... Southeastern crowned snake
Thamnophis sauritus sauritus ..... Eastern ribbon snake
Thamnophis sirtalis sirtalis ..... Eastern garter snake
Virginia striatula ..... rough earth snake
Virginia valeriae ..... smooth earth snake

VENOMOUS (PIT VIPERS AND CORAL SNAKE)

Agkistrodon contortrix ssp ..... copperhead
Agkistrodon piscivorus ssp ..... cottonmouth
Crotalus adamanteus ..... Eastern diamondback rattlesnake
Crotalus horridus ssp ..... timber/canebrake rattlesnake
Sistrurus miliarius ssp ..... pigmy rattlesnake
Micrurus fulvius fulvius ..... coral snake

FOR FURTHER READING

The Reptiles and Amphibians of Alabama by Robert H. Mount. Alabama Agricultural Experiment Station, Auburn. 1975.

Reptiles and Amphibians of Eastern/Central North America by Roger Conant and Joseph T. Collins. Houghton Mifflin Company, Boston. 1991.

Alabama Stumpage Price Trends

Continued from page 21

stumpage price change (whether positive or negative) and biological growth, and the costs are foregone interests, which can be earned by a landowner who harvests the timber and puts the timber sale revenue into a bank or other investment vehicles.

Forest landowners are diversified, with different objectives, incomes, interest rates, and price expectations. Forestlands have different productivity. For any given year, some landowners will consider that the benefits (price change plus biological growth) are higher than the costs (interest foregone) and therefore decide to hold their timber for another year. Others who think the costs to hold their timber for an extra year are higher than the benefits will harvest their timber immediately. Many thousands of forest landowners, acting independently, generate the above result as long as there are not significant volumes of timber imports from other countries.

From 1995 to 1996, Alabama's forest has grown 1,185 million board feet, representing an increase of 5.2 percent in inventory in one year, approximating the annual rate for the last 20 years. On the other hand, real interest rates in the market were about 6-7 percent in the last 20 years. Therefore, it is not surprising to see that the real prices appreciate at an annual rate of 0.5 to 2 percent.

Why have hardwood pulpwood and sawtimber stumpage prices increased more than Southern pine in the last 20 years? This is because technological advances in the paper industry and recent developments in the furniture industry in Alabama have increased the demand for hardwood. Hardwood was rarely used in pulp and paper production in the 1970s. As Southern pine pulpwood stumpage prices increased, the industry responded by developing technology that utilizes a cheaper resource—hardwood pulpwood. At the same time, the furniture and other secondary industries also started to invest in Alabama and demand for hardwood sawtimber increased as well. Today Southern pine stumpage is still higher than hardwood stumpage, but the gap between them has been narrowed in the last 20 years.

Conclusion

Forest landowners who purposively grow hardwood or Southern pine species, pulpwood or sawtimber should be encouraged that stumpage prices for each of these are increasing in Alabama. Owners contemplating a timber harvest should consider the relationship between the biological growth rate of their forests, their personal interest rate, and possible stumpage price changes. If landowners think the rate of stumpage price change plus the biological growth rate of their forests is larger than their personal interest rates for a period of time (say, a year or five years), they should delay harvest until the end of the period. Otherwise, an earlier harvest is indicated. If profitability is not the landowner's primary objective, other values should also be considered in the timber harvest decision, and harvesting would be in order only if other values do not outweigh the potential revenue gain.

Practical Forestry Aesthetic Practices in the South

Continued from page 25

of burned slash will have. In a year or two, the tract will green up and evidence of the fire will be gone.

Color

Burning or spraying for site prep usually leaves a harvest area black or brown compared with the surrounding green landscape. This contrast is most noticeable on harvest units in foreground and middleground situations. These negative effects tend to diminish as the tract begins to "green-up." Research done by Gordon Bradley states that "green-up" occurs when "...trees are between 4 to 10 years old or 8 to 15 feet tall" depending on the species, and planting density.

Harvest Patterns

Probably the most important thing to consider when harvesting a visually sensitive tract in a background situation or on a ridge is the shape and size of the harvest unit. Square or rectangular harvest units usually look unnatural. When planning the harvest, examine the surrounding landscape and notice how the natural openings (i.e., fields, pastures, rock outcroppings) in the landscape look. Try to make your harvest area mimic those natural openings, rather than just following boundary lines. It is also important not to make your harvest units too large. Even if the shape mimics natural openings, a harvest will be obvious if it dominates, rather than blending with, the landscape. Use of SMZs and wildlife corridors can be used to break up large harvest units, helping them to blend by reducing their apparent size.

Conclusion

As the potential increases for timber harvests to become more visible to the public, landowners must work to make their stands more visually appealing. The first step is to determine how sensitive your land is, and if it needs to be managed for aesthetics. Once the sensitivity of an area is determined, visual impacts can easily be mitigated with a little preplanning of the harvest and use of the techniques discussed here. For more information on forest aesthetics, obtaining a copy of the manuals referenced in this article is recommended. They are full of good information and may be obtained from the authors.

References

Bradley, Gordon A. "Forest Aesthetics Harvest Practices in Visually Sensitive Areas." Washington Forest Protection Association. Olympia, Washington. May 1996. Order information: Gordon A. Bradley, Professor, College of Forest Resources, Box 352100, Seattle, WA 98195-2100. Phone: 206-685-0881. Contact the author for cost.

Minnesota Department of Natural Resources. "Visual Quality Best Management Practices for Forest Management in Minnesota." May 1994. Order information: Alan Jones, Minnesota DNR, Resource Management Section, 413 SE 13th St., Grand Rapids, Minnesota 55744. Phone: 218-327-4449. Single copies free.

Rewards Program Revised

by KENNETH ELMORE, Law Enforcement Specialist, Alabama Forestry Commission, Northwest Region

The newly expanded rewards program offered by the Alabama Forestry Association and the Alabama Loggers Council should have positive benefits for Alabama landowners and forest industry. The old reward program offered up to $500 for information leading to the arrest and conviction of persons charged with woods arson and timber theft crimes.

The new reward offers up to a $5,000 cash reward for information leading to the arrest and conviction of persons committing any forestry-related crime, such as timber theft, equipment theft, equipment vandalism, woods arson and illegal dumping. You may qualify for a reward even if your information does not lead to an arrest and conviction.

Higher cash rewards were established to encourage greater public participation and reward citizens who get involved. Forestry crimes affect landowners, loggers, forest product companies, insurance companies, taxpayers and ultimately, the consumer.

The new reward program will follow guidelines established by the Timber Security Committee of the Alabama Forestry Association. The committee is made up of AFA industry membership and the regional investigator from each of the four administrative regions of the Alabama Forestry Commission. The committee will review reward recommendations made by the Alabama Forestry Commission in the areas of fire, timber theft and illegal dumping. The Alabama Forestry Commission's regional investigators will bring reward requests before the committee for consideration.

Equipment theft, equipment vandalism, and other forestry-related crimes will be handled by the county sheriff. Reward requests originating from the county sheriff will go through the Alabama Forestry Commission administrative process and be presented to the security committee by the regional investigator. After reviewing these recommendations the committee will make reward requests to the AFA based on the value of information received. Smaller rewards will be paid for information not resulting in arrest or conviction, but which can be used to build future cases against individuals.

A toll-free secret witness hotline is provided by the Alabama Forestry Commission and is staffed 24 hours a day. Callers may remain anonymous if they choose. The number is **1-800-222-2927.** You may also contact any Alabama Forestry Commission office. The **Alabama Forestry Association, Alabama Loggers Council** and the **Alabama Forestry Commission** are seeking your help in reducing the frequency of forestry-related crimes.

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